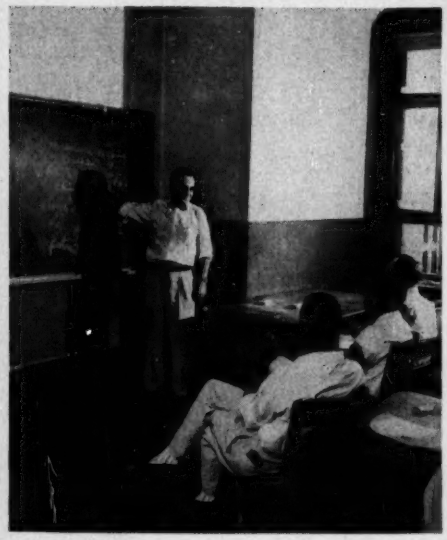
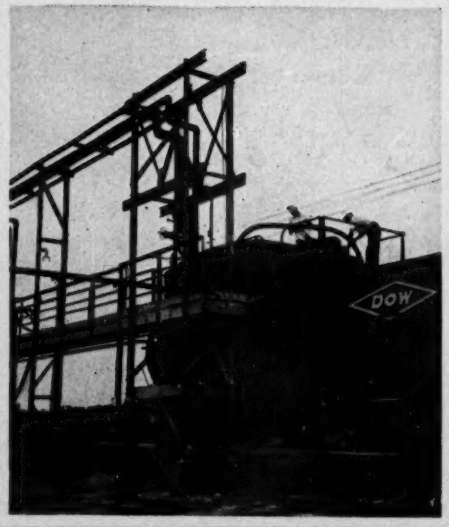
Chemical Week

August 29, 1953





What does a union really think of chemical management? Here's an inside peek . . . p. 19

Back to school to boost the economy; industry rearmament plan, labor learn . . . p. 23

Treasure from trash: turning the trick is this firm's bread and butter . . . p. 38

Size up the new trend in selling caustic soda; here are the pros and cons . . . p. [illegible]

There's a market surge ahead for the versatile vinyls; this drug is the acetate . . . p. 58

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Chemical Week

Volume 73 • August 29, 1953 • Number 9

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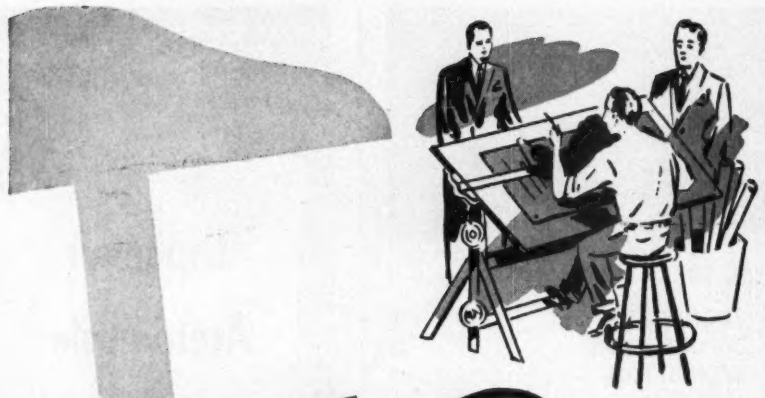

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- Naphthalene Purification
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- Para Xylene Recovery
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OPINION. . . .

The Four Tops

To THE EDITOR: In your Aug. 8 issue there is a news article on lacquer coatings for plastics. This article unmistakably implies that lacquers for plastics are an extreme specialty and that most of the business is enjoyed by the four companies mentioned. . . .

I wish to point out that this impression is completely erroneous. All suppliers of a broad line of industrial coatings, of which there are many, doubtless manufacture coatings for use on plastics, just as our company does. When one of our salesmen brings in a job for plastics we take it in our stride just like any other job.

Without exception the coatings supplied have performed satisfactorily. It seems safe to assume that fifty to a hundred other manufacturers of industrial coatings could say the same thing. Why all the hullaballoo?

Another point—when plastics are employed usually they replace metal. So the coating for plastic does not represent an added volume but just a different kind of coating for a different kind of substrate. . . .

WAYNE R. FULLER
Director of Research
Grand Rapids Varnish Corp.
Grand Rapids, Mich.

There is no question that nearly all paintmakers supply some coatings for plastics. CW, moreover, made no suggestion to the contrary. What we did report is that the four companies mentioned not only do most of the business in the plastics coating field but that they also specialize in that business.—ED.

Lacquered Plastics

To THE EDITOR: Congratulations on your news article "Vital Thousandth" (*Aug. 8*) concerning protective lacquer coatings for plastics . . .

Although not mentioned, considerable credit for increased lacquer sales is due to the recent widespread use of high-vacuum coating or metallizing for producing decorative effects. At least one vacuum equipment manufacturer worked closely with lacquer

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: W. A. Jordan, Chemical Week, 330 W. 42nd St., New York 36, N.Y.

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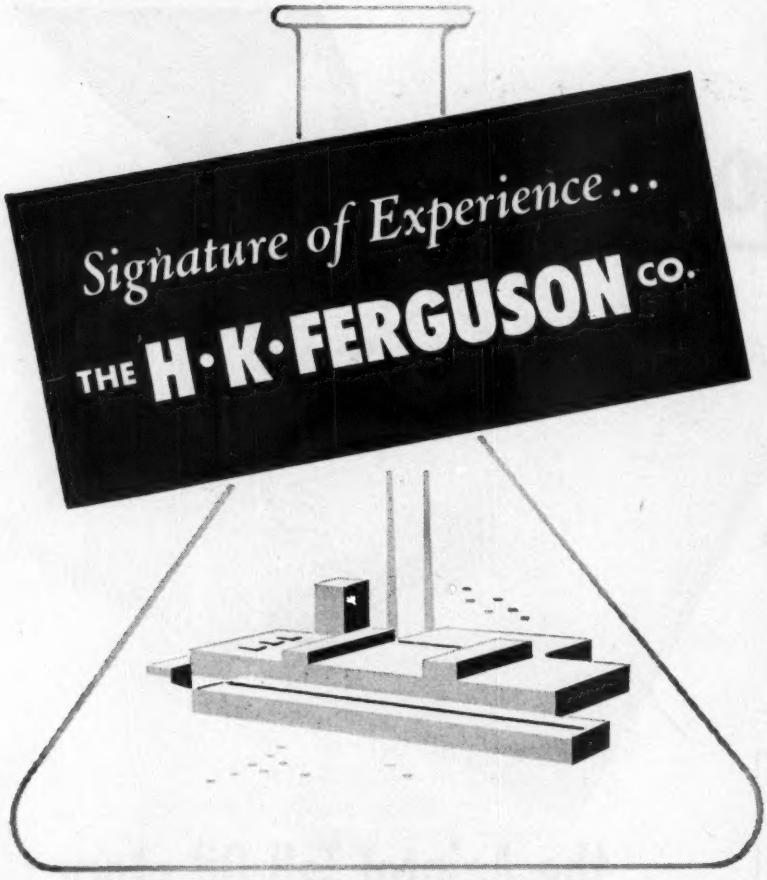

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concerns to develop suitable protective finishes, thus opening up new applications for this inexpensive method of producing eye-catching exteriors, and creating an outlet for many scrap plastics.

One automobile manufacturer has adopted this method for finishing a part of the tail-light assembly on 1953 models, which speaks for the general acceptance of this finishing method.

H. Potter Trainer, Jr.
Sales Engineer
Process Controls Division,
Baird Associates, Inc.
Cambridge, Mass.

Name Withheld

To the Editor: I have followed your periodical with great interest since its start a couple of years back. Happily, contrary to my expectations, or should I say fears, CW as a frankly business magazine has been far more understanding of the problems of the chemist employee than those periodicals representing his own professional societies.

Your news articles on the chemical industry's constant search for potential executives . . . have always held my attention through every well-written paragraph. Recently an occurrence pertinent to this subject so affected me that I resolved that I could not let the next such article pass without relaying my opinion. Rather than talk as some fictional third person and have you see through the thin veil of pretense, I will confess that I am the injured party.

After a brief period of breaking in at the top level of a small laboratory within a large company, it was indicated that I was obviously the logical choice for succession to administration of that laboratory when such an opening should occur. This was more than an impression gathered by an ambitious mind. It had been stated in so many words.

The potential opening occurred much sooner than anticipated and the time for choice was short. I was not chosen. A very decent fellow got the job although his qualifications were not those deemed essential.

Believe me, I am not paranoid nor do I have a chip on my shoulder but the announcement of the appointment came to me with an added twist. The departing administrator indicated that my abilities were highly regarded but that I should not expect any promotion from my present position, presumably for as long as I should stay. Nevertheless I was urged to stay.

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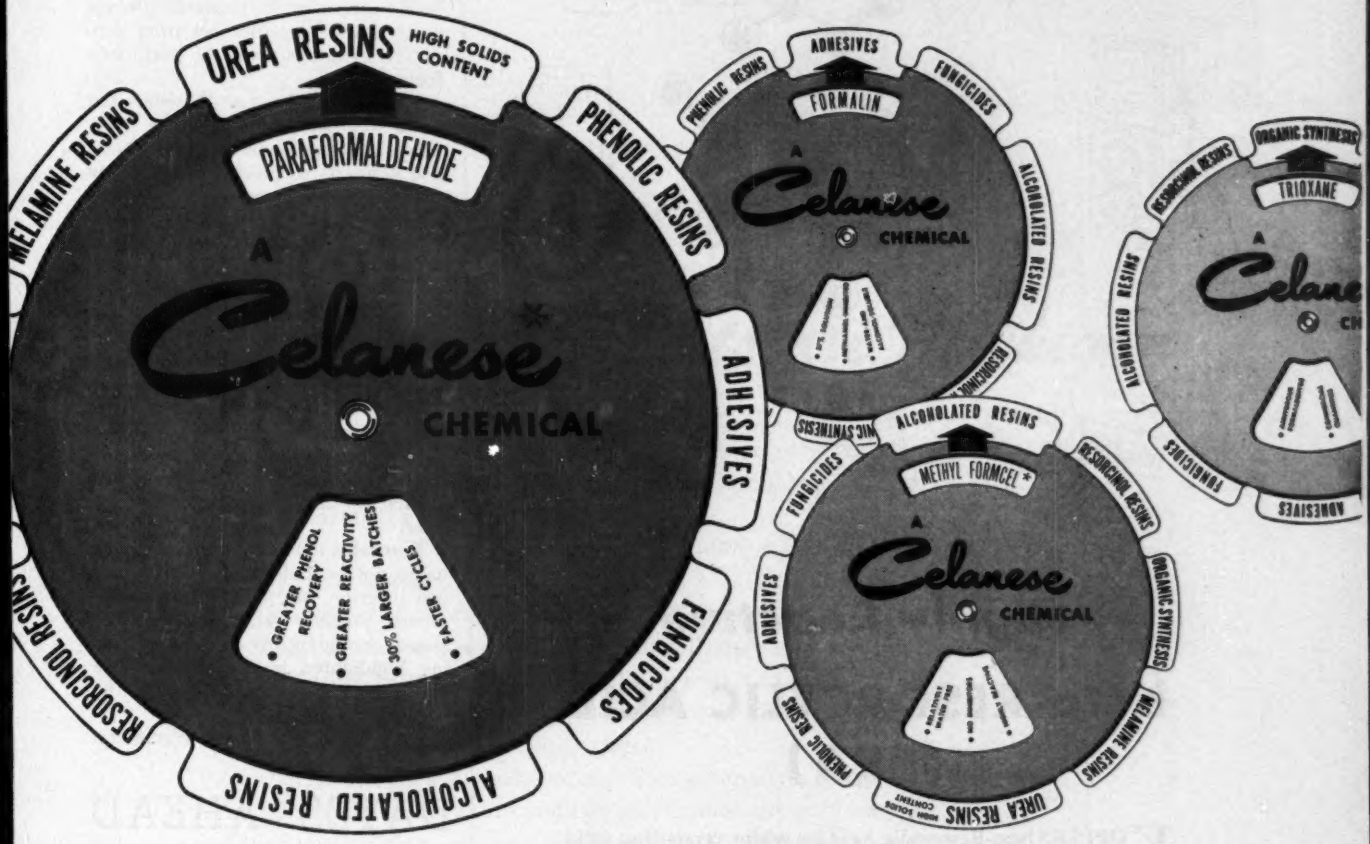

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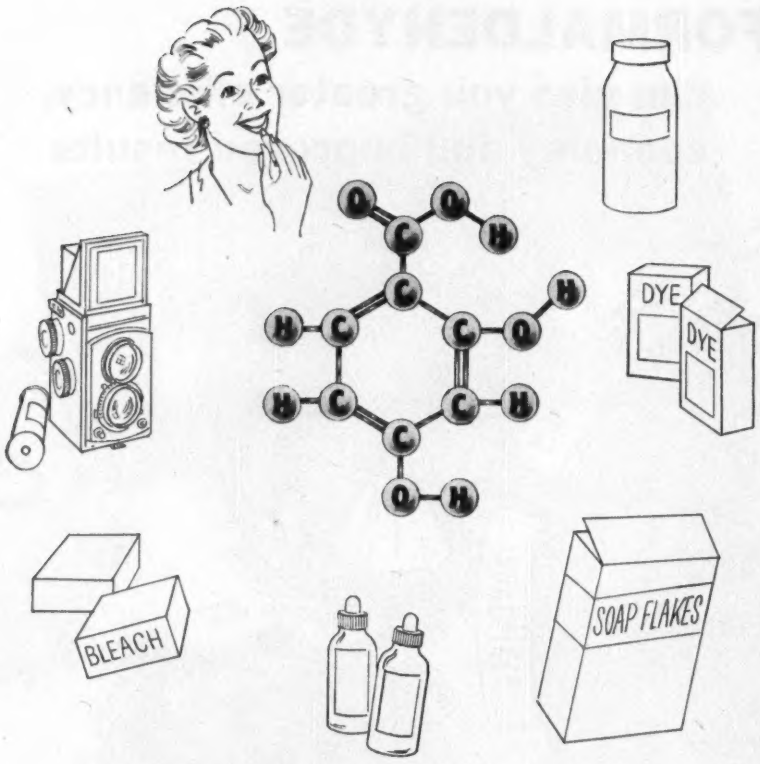

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OPINION . . . . . .

Naturally no reference was made to my religious background as a cause.

However, three separate executives of the division privately called me aside to say that I shouldn't start to think it had been a factor. It's not hard to tell why the promotions never come despite reassurances from people who do not want to hurt one's feelings.

I know CW has no sob sisters but I am writing you because the situation is quite pronounced in the chemical industry, so much so that a few outspoken members have privately advised those of the less-favored ethnic groups not to seek a career in chemistry.

So you can see that I am compelled to read your honest discussion of the real shortage of top talent (*CW, Aug. 8*) with more than a trace of cynicism. I do not criticize CW. . . .

But as a footnote to your article, may I suggest to the industry that, if it would lift some of its self-made barriers, it might find a bit of that elusive top talent blinking in the new light.

Naturally, I must urge that my name not be published. I write, not just to gripe, but to point out an industry problem. However, no employer, including my own, enjoys being highlighted in such an instance . . . and I must confess I need the job I do have. . . .

NAME WITHHELD

DATES AHEAD

American Chemical Society, 124th national meeting, Conrad Hilton hotel, Chicago, Ill., Sept. 6-11.

Synthetic Organic Chemical Manufacturers Assn., Commodore hotel, New York, N.Y., Sept. 9.

National Agricultural Chemicals Assn., annual meeting, Essex and Sussex hotel, Spring Lake, N.J., Sept. 9-11.

American Institute of Chemical Engrs., Fairmont and Mark Hopkins hotels, San Francisco, Calif., Sept. 13-16.

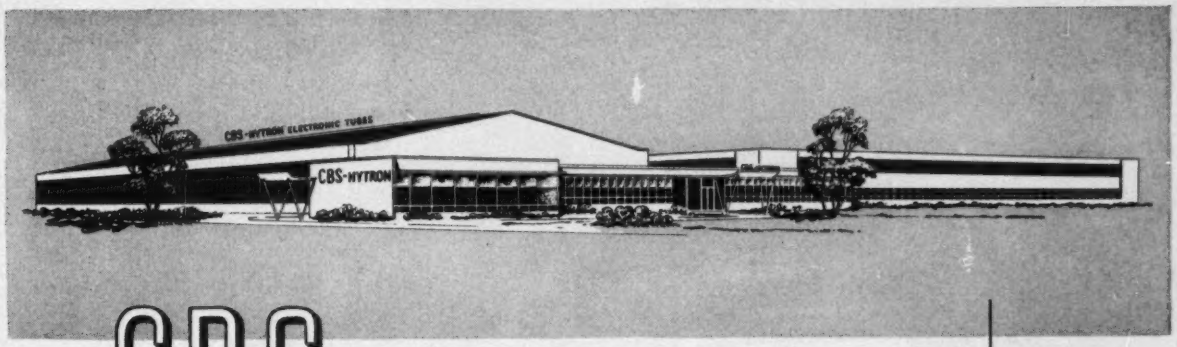
The Electrochemical Society, Ocean Terrace hotel, Wrightsville Beach, N.C., Sept. 13-16.

American Assn. of Textile Chemists and Colorists, annual meeting, Conrad Hilton hotel, Chicago, Ill., Sept. 17-19.

Chemical Market Research Assn., fall resort meeting, Pocono Manor Inn, Pocono Manor, Pa., Sept. 17-19.

Assn. of National Advertisers, annual meeting, Hotel Drake, Chicago, Ill., Sept. 21-23.

Drug, Chemical and Allied Trades section, New York Board of Trade, annual meeting, Pocono Manor Inn, Pocono Manor, Pa., Sept. 24-27.



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NEWSLETTER

Even though Interhandel would like an out-of-court settlement of its ownership claims on General Aniline & Film (see p. 23), later developments make it clear that the Office of Alien Property will have no part of such a deal. Officials there have slammed the door shut on terms proposed by Walter Germann, Interhandel's managing director, and declare they are nowhere near any out-of-court settlement.

•

Monsanto's growing interest in steroids (CW Newsletter, Aug. 16, '52) was underscored late last week when the company revealed that its researchers had developed a simplified version—using toluene as the starting material—of Woodward's cortisone synthesis. Monsanto has applied for patents on the short-cut method.

The company last year got an $18.4-million certificate of necessity for a cortisone plant, renewed it in March; but the process is still to be pilot-planted (probably at St. Louis) before the firm decides whether it should go into steroid production. Although the company's organic division has made such pharmaceuticals as aspirin and chloramphenicol (in cooperation with Parke, Davis), production of cortisone and related compounds would represent a significant diversification step.

•

No more "creeping socialism" in electric power? The Dept. of Interior last week stated, with President Eisenhower's approval, that in the future it will not build power facilities if local public or private interests can and will do the job.

But in the next paragraph, figuratively, Interior ranked industry below public and private utilities in the preference priorities on available federal power. You can discount any immediate effects, though: no large blocks of firm, low-cost power will become available within the next decade anywhere except in the Pacific Northwest. And there Bonneville Power Administration has committed its current and new power through 1961.

•

Meanwhile, in New York State, public-power advocate Franklin D. Roosevelt, Jr., told a CIO labor get-together that the Capehart-Miller bill to allow private development of Niagara Falls would, if enacted, make the neighboring communities "ghost towns." Studding his polemic with such words as "monopoly" and "steal," he declared that five chemical concerns are either moving away or building plants elsewhere.

But the companies in question took a different view:

• Hooker's Bjorne Klaussen termed the speech "political" and "very misleading," pointed out that its new Montague, Mich., plant was near Midwestern markets, paid more for its power than the Falls plant.

• Carbide's Electro Metallurgical Co. and Carborundum both denied plans to leave the Falls area, as did Oldbury. "Roosevelt was looking for votes," said one company's spokesman.

The controversial Capehart-Miller bill passed the House of Representatives, still awaits Senate action.

Meanwhile, the coming winter's prospects are brighter than last year's for Pacific Northwest chemical plants with firm-power contracts. A severe drought made it necessary last year to cut off not only interruptible power, but 150,000 kw. of firm-power as well. But now full reservoirs and new storage facilities point—barring unusual weather—to a normal winter.

But "normal" isn't enough. This year's estimated deficiency is 200,000 kw. (as against 650,000 kw. last year) and interruptible power will likely be cut again as it has been for several years past.

•

Du Pont's Pres. Crawford Greenewalt this week belabored the prophets of peacetime recession. He sees war as a shackle on business rather than as a goad. "The future is mortgaged; research and development are delayed and interrupted; personnel is diverted from creative pursuits to the taut necessities of the moment. . . . Business has far more to gain from a drop in government spending than it has to lose."

•

But along the ever-pressing upward climb is an occasional downhill slip—not serious, but a dislocation nevertheless:

• Reconstruction Finance Corp.'s decision to shut down its Institute (W. Va.) copolymer plant (see Market Letter, p. 55) affects 427 employees. Of these, 227 will be dismissed Sept. 18; the rest will stay on temporarily to put the unit in stand-by condition.

• Du Pont will shut down its small organics plant at New Brunswick, N. J., next May. The 170 employees will be transferred, pensioned, or dismissed.

•

Cramet, Inc., this week took another step forward on its $25-million titanium metal plant (CW, Aug. 15). It awarded a contract to Vitro Corp. of America to manage its construction. Location is still unspecified, but the time schedule has been speeded up: it now expects partial operation somtime next year, full production a year later.

•

There's a new name in the industry. Edwal Laboratories, Inc. (Ringwood, Ill.) next Tuesday will become Ringwood Chemical Corp. Edwal Scientific Products Corp.—formed in 1950 to market photographic products—will now be a separate entity.

•

Chemical research may revolutionize pattern making. Ford Motor Co., is working on treatment of wood to prevent shrinkage, which has caused costly errors in making models. The same difficulty, of course, plagues other auto makers and aircraft firms. Koppers Co., too, is working on the problem.

Best bet at the moment seems to be a synthetic resin treatment. The wood will be more difficult to work and shape, labor and materials costs will soar—but the patterns will retain their dimensions.

•

The animal kingdom has more than ever been the involuntary recipient of chemicals. First it was sleeping pills for fish (CW, Aug. 1) and then a "hotfoot" for birds (CW, Aug. 15). Here are two more:

• California is ridding its lakes of inferior fish by scattering rotenone—it kills all the fish prior to restocking with trout.

• Cincinnati is spraying a 1:10 solution of ammonia in water to rout starlings and martins from downtown parks.

. . . The Editors

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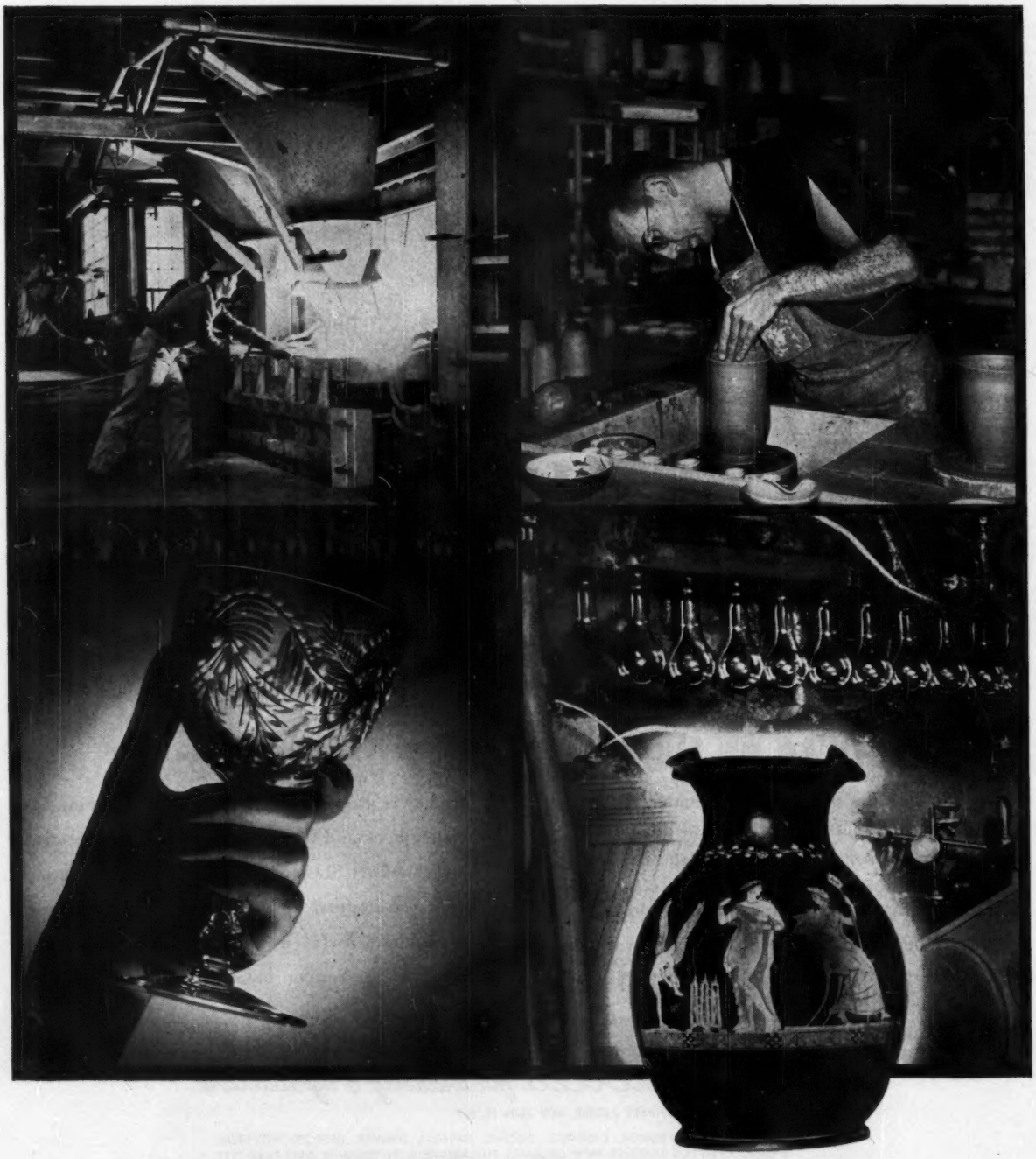

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Pennsalt Chemicals

BUSINESS & INDUSTRY . . .

Reassessed Balance

The fuss and furor among Washington bureaucrats has brought a new balance to the controversy over the National Bureau of Standards' relations with other agencies and outside business.

Two developments highlighted the change of equilibrium:

Commerce Secretary Sinclair Weeks restored Allen Astin as permanent head of the NBS.

The Post Office Department late last week dismissed the battery additive fraud order issued in February on the basis of NBS tests. A fraud order prevents delivery of mail to persons or companies on the grounds of an intent to deceive.

Restoration of Astin represents a complete reversal of Weeks' ideas six months ago. He said then that the report of a scientists' committee evaluating the NBS would have no bearing on Astin. He was to go.

The committee report was submitted last week. Among its recommendations: "Policy and procedural decisions" of the NBS director should be transferred to the Commerce Secretary, leaving technical matters for the director to supervise.

The Post Office recognized, first, that there was a substantial disagreement over the benefits of battery additives, and that the Department of Commerce, under which the NBS operates, has authorized further study of battery additives. But its major point was that the evidence presented at the original hearing, and that introduced later by the Senate committee, still leaves insufficient proof of "an actual intent" to deceive.

But while these two developments shifted the bureaucratic balance, overall assessment of the controversy must wait on careful study of the scientists' evaluation of NBS. And perhaps, rather than just modifying a balance, it may suggest changing the fulcrum on which the balance depends.

Moving into Big Time?

B. F. Goodrich Chemical Co. is reported as readying pilot-plant operations to speed up production of its new synthetic fiber—"Zetek"—starting September 1. At a plant at Avon Lake, O., Goodrich has for the past several months been turning out small amounts of the fiber, has subjected it to a series of tests through the weaving, wearing, and abuse stages.

Now larger capacities are needed—ostensibly to enable engineers to work on firmer ground in overcoming production bugs that have developed. Output after the September 1 speedup will range between 5,000 to 10,000 lbs./month.

For some time, Goodrich has been engaged in research work at its basic research laboratories at Brecksville, O., on a polyvinylidine fiber and also on one containing acrylonitrile. But Zetek, say company officials, is neither of the two, is a fiber developed at Brecksville as a separate project.

HOOVER: Neither one nor the other.

While pilot-plant operations are now being stepped up at Avon Lake, Goodrich researchers don't expect full-scale production of Zetek to get under way before the middle of 1954. Its Avon Lake facilities (which include production units for "Geon" polyvinyl resins, plasticizers, and various agricultural chemicals) can easily be adapted to handle the added production load now, may actually be the site of future production activities.

In size, Goodrich's Avon Lake plant ranks with the company's largest works, is a general clearance point for all new products put into pilot-plant operation.

Company officials have never officially released technical data on Zetek, are mum as they await further ironing out of production snags.

Neoprene's Round 4

What happens this week in the collective bargaining election at DuPont's neoprene plant in Louisville, Ky., may set the future course for labor.

If the 1,700 production and maintenance employees choose to be represented by the International Chemical Workers Union (AFL), the big nationwide unions will be encouraged to bear down and try to organize within the next 12 months the approximately 50% of chemical employees still out of the ranks.

But if the neoprene workers reject the AFL union and give their voice to the nonaffiliated Neoprene Craftsmen's Union, it's probable that chemical field organizing by the international unions will slow to snail-pace.

This will be the fourth collision between ICWU and the NCU at the neoprene plant within the past year. In the first election, no union received a majority; the NLRB threw out the first runoff on the ground of company interference, and the second runoff for union irregularities.

A Corpse Is Buried

Sherka Chemical Co., which handled millions of dollars' worth of chemical and pharmaceutical products in its prewar heyday, was being fitted for its shroud and coffin this week.

The Office of Alien Property is ordering dissolution of Sherka, which was an affiliate in the old Schering organization when that concern was German-owned. When OAP seized Schering early in World War II, it also nabbed Sherka and that company's wholly owned subsidiary, Delta Pharmaceutical Co., Inc., also of Bloomfield, N. J. Sherka and Delta never did any manufacturing, were used only as distributing agencies; and for the past 10 years they've been totally inactive. Delta was liquified last spring.

After payment of pending bills, Sherka's remaining assets—about $13,000 in cash and $25,000 in U.S. Treasury Bonds—will be turned over to the Attorney General, to whom will be directed any claims that companies or individuals may have against Sherka.

Unveiling a Giant

This week another occult colossus in the chemical industry is wrapping up final details to go to the public for financing.

The reason: Stauffer has simply run out of money, wants to convert its long-term bank loans to long-term debt and it needs capital for further expansion.

Stauffer Chemical Co. of San Francisco and New York has long been a puzzling member of the community of U.S. chemical companies. Founded in 1885, its stock has been held by virtually the same three familes originally in on the organization; corporation matters have been a tightly guarded secret. Sales figures and net value have often been the subject of spirited speculation; holdings in various subsidiaries have led to the belief that when the shroud was completely lifted, Stauffer would emerge as a dominant figure in the U.S. chemical picture.

Now the unmasking is at hand. Stauffer will go to the public early next month with a package deal; it plans to offer some $12-15 million in debentures, $7-8 million in treasury common stock—equal to between 10-15% of stock presently outstanding. Morgan Stanley & Co., underwriting the deal, has been laboring over a prospectus in recent weeks, verifies CW's recent prediction (*Newsletter, Aug. 8*) that Stauffer's annual sales (including subsidiaries) reach up just under $80 million.

Backbone of Stauffer's business today is the production of heavy chemicals but it's moving closer to the consumer level, too. Among its more lucrative products: sulfur, sulfuric acid, carbon bisulfide, alum, superphosphates, boric acid, ferric sulfate, sodium hydrosulfide, chlorine, caustic soda, carbon tetrachloride, titanium tetrachloride and trichloride, hydrogen chloride, DDT, polychlorobenzenes, citric acid, tartaric acid, insecticides. In the production of carbon bisulfide alone, Stauffer ranks first in the country, sells its output largely to the rayon, agricultural (for fungicides) and rubber industries. Carbon tetrachloride is another prominent product; places Stauffer in line as a major factor in U.S. annual production. Its production is soon due to climb even higher, too, when a new plant at Louisville (producing carbon tetrachloride from hydrocarbon gas) comes onstream.

In ground and processed sulfur, Stauffer boasts the biggest sales volume in the country. As far as chlorine-caustic is concerned, company officials modestly admit "we're not much compared with several other competitors," but point out that Stauffer doesn't try to sell any chlorine from its Niagara Falls plant—chooses instead to use it to make carbon tetrachloride and various metal chlorides. Latest achievement: bringing the titanium tetrachloride plant at Niagara Falls close to running capacity—a substantial part of total domestic output.

Then There's More: In addition to its own plants, Stauffer now envelops six wholly owned subsidiaries (San Francisco Sulphur Co., Stauffer Chemical Co. of Nevada, St. Louis Sulphur & Chemical Co., Stauffer Pan American Co., Sudentsche Chemischke Works of Germany, Stauffer De Mexico); one company through stock ownership in excess of 66%; six companies

by 50% stock ownership,* and three others "with a substantial interest—but less than 50%." Exports account for less than 1% of Stauffer's total output.

Best bets as to what the company will do with part of the money it gets from the stock issue next month include a number of specific expansion projects:

- About $1 million to double production of Capitan 50-W—a fungicide—used in spraying fruits (particularly to prevent apple scab). Stauffer is licensed by Standard Oil Development, New Jersey, to manufacture Capitan, plans to sell it jointly with CalSpray.
- Possible capitalization on the production of nitrogen phosphate fertilizer (via the Italian Rumianca process) at Tacoma, Wash. "If the present shakedown tests pan out," company officials say, "Stauffer may offer it on a sub-licensing basis."
- Expansion of carbon tetrachloride facilities at Louisville on a scale favorably comparable with its original expansion outlay of over $3.75 million.
- Further developmental work on various fungicides, now in the research stage.
- Expansion of Flotal (soil conditioner) output—if present sales tests in southern California jive with records set in northern California. "We don't want to go out on a limb too far," say cautious executives, "until we're more sure of what it will do under other climactic conditions. There are endless variants—soil differences, weather variables, wide differences of application." But Flotal production is due for a chunk of stock sale proceeds.

* Old Hickory Chemical Co. (producer of carbon bisulfide); New York-Ohio Chemical Co. (aluminum chloride, anhydrous hydrogen sulfide, antimony trichloride); Montrose Chemical Co. of Calif. (chloral-mono-chromate, DDT); Philadelphia Quartz Co. of Calif. (sodium silicates, epsom salts); Cornwall Chemical Ltd. (carbon bisulfide); Western Phosphates, Inc. (super phosphates). The three "less than 50%": West End Chemical Co. (borax, soda ash, lime); Nyotex Chemicals, Inc. (anhydrous hydrogen fluoride, anhydrous aluminum chloride, lime); Australian Cream Tartar Co., Ltd. (cream of tartar, tartaric acid, phosphates, citrates).

Running the Show: President Christian de Guigne III took over in 1946 from his grandfather who had held the office for some 47 years. Preceding his election, de Guigne III had been active for many years as an officer and director of the company and its associates. Hans Stauffer, a nephew of the original John Stauffer, has been general manager since 1941—guided the company through the critical war years. John Stauffer, Jr., only son of the founder, started the southern California Div., gets credit for its rapid growth and development. All officers are heavy stockholders and considerable impact upon company affairs is felt when any individual block of stock, through death, passes into other hands.

That's been a real problem and has put an additional strain on Stauffer finances. The death of Sol Peiser, president of Consolidated Chemical Industries, Inc., a year ago last fall, was an especially heavy drain. Though Peiser held no Stauffer stock, his chunk of the voting stock in Consolidated amounted to 50% plus a block of participating preferred. To protect its interest (the other 50%), Stauffer bought the bulk of Peiser's stock—now holds 94½% in toto.

What's ahead for Stauffer, like all predictions, is open to conjecture. But judging from its record of steady expansion and its obvious moves to diversify while consolidating, prospects are, at the least, intriguing.

TOP MANAGEMENT: Hans Stauffer, vice-president, general manager (right) and Christian de Guigne III, president, guide Stauffer today.

COMPANIES . . . .

An advance compilation of company earnings prepared by Monsanto Chemical Co. for CW's semiannual earnings round-up (*CW, Aug. 15*) was incorrect. Monsanto now reports its revised net earnings figure for Jan.-June '53, as $13,503,974.

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Purchases come to the forefront this week:

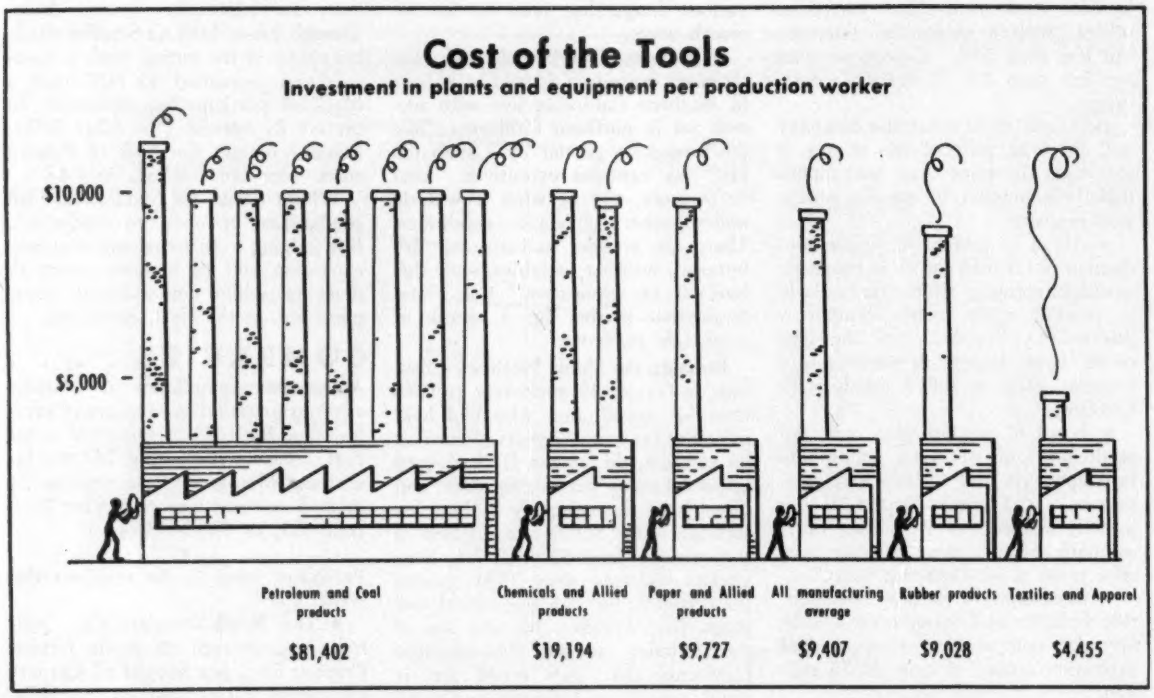
- The Smith-Douglass Co., Norfolk, Va., through its newly formed Coronet Div., has bought all Coronet Phosphate Co.'s holdings in Hillsborough and Polk Counties, Va., for $6,350,000. Included in the deal: a large defluoridation plant outside Richmond, Va., phosphate mines and deposits in Hillsborough County and at Teneroc, in Polk County.
- Celanese Corp. of America has purchased the Texas Co.'s waterfront bulk plant, Newark, N.J., plans partial occupancy immediately.

EXPANSION . . . .

Synthetic Wax: Close on the heels of ground-breaking ceremonies for its $7-million polyethylene plant at Longview, Tex., Texas Eastman Co. has revealed additional expansion plans. Its intent: to build a $3.8-million synthetic hard wax plant in connection with the polyethylene works. Output will amount to several million pounds of wax annually; construction (as in the case of the main part of the work on the polyethylene plant) will start next month.

•

Aluminum: Olin Industries, Inc., will soon start construction on a $169-million aluminum plant. Plans for financing the project are almost completed, await negotiations with the federal government in order that contracts may be signed on the necessary facilities. Olin, when initially stating its plant last November, said no plant site had been selected, still has not named it. Potential output is estimated at over 110,000 tons/year of primary aluminum.



Symptoms of Ripeness

Now the nation's fifth largest industry and expanding by about 10% a year, the chemical industry in the United States is beginning to show signs of growing out of its hectic adolescence, a CHEMICAL WEEK study indicates this week.

Latest figures from the Treasury Dept. disclose that this industry's total capital investments* have been increasing since World War II at a faster pace than those of any other industry except products of petroleum and coal. Washington's adding machines are still humming, recapitulating business data from 1950 tax returns; but it's known that chemical investments reached an all-time high of $9.3 billion in 1949, and the upward trend is still strong and steady.

Spur to Productivity: In amount of capital invested per production worker, the chemical industry ranks third; and in this category, the rate of increase has been even greater than in total investment. While total chemical investment rose by 36.1% from 1946 through 1949, its investment per production worker went up by 44.97%. Corresponding figures for all U.S. manufacturing industries are 29.6% and 35.1%.

Meanwhile, as shown in the table at the bottom of the page, production per worker has gone up by substantial fractions between 1947 and 1950. While the ratio varies with each industry, it certainly appears that much of the increase in worker productivity is related to industrial expansion—the employees are manning plants that are better equipped, more efficiently designed.

Storm Warnings Seen: That brings up the labor unions' current drive for wage increases that union leaders claim are due because of the workers' higher productivity. According to the unions, this argument stands up even if it be granted that most—if not all—the productivity increase is the result of more and better mechanization; for, say the labor spokesmen, if it was worth $1.50/hour to have a man operate a machine that turned out $6 worth of goods per hour, why not a $2 wage rate for the operator of a machine putting out $8/hour?

Possibly the most significant aspect of these capital investment figures is in their indication that the chemical industry, after its late start, is catching up with the rest of the nation's economy. From now on, the industry may feel that it should pay more heed to those economists who've been warning against overrapid expansion. One hint that this expansion rush might carry the chemical industry too far, too fast, is seen in this fact: while investments increased in 1949 in six of the principal U.S. manufacturing industries, including chemicals, there were decreases in the other 11.

* Capital investment is defined as total assets minus holdings of government securities and investments in other corporations. This tends to exaggerate the position of the petroleum industry in the diagram at the top of the page, because much of its capital investment is in marketing as well as in manufacturing facilities.

Industry	Investment per worker	Production per worker
Chemicals and allied products	up 44.97%	up 38.1%
Metals and metal products	27.8%	27.1%
All-manufacturing average	35.1%	23.5%
Paper and allied products	45.05%	16.6%
Petroleum and coal products	38.2%	14.0%

Renegotiation—With What Safeguards?

Renegotiation of government contracts—the thought engenders irritation in the nerves of busy company executives and brings a gleam into the eyes of its lawyers.

For chemical manufacturers, renegotiation—which allows the government to determine whether excessive profits are being made on defense contracts—is a doubly complicated procedure: not only must they cope with a maze of regulations, they must also educate government men on common industry problems and practices.

There was the potash chemical manufacturer, for example, who was faced with a ruling that salt brine could not include potassium salts.

Then, too, there was the case of confusion between benzene and benzine.

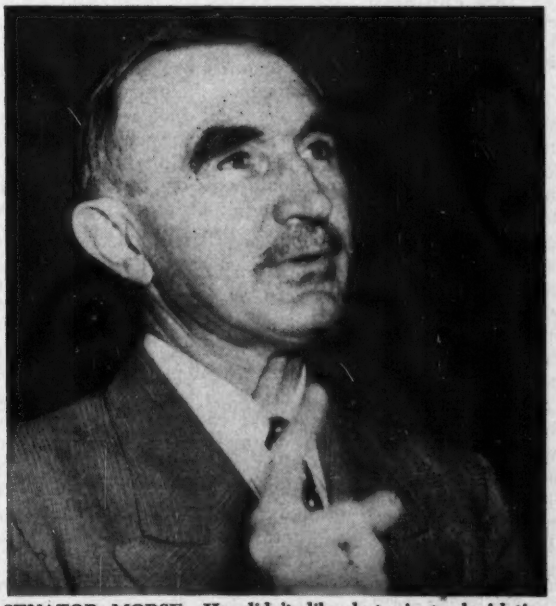
But these are details; and manufacturers this week were considering two basic uncertainties in the renegotiation picture: whether it will be extended and what form it will take.

There is a question whether the whole program will continue beyond Dec. '53, since only the House of Representatives passed a bill extending the renegotiation act.

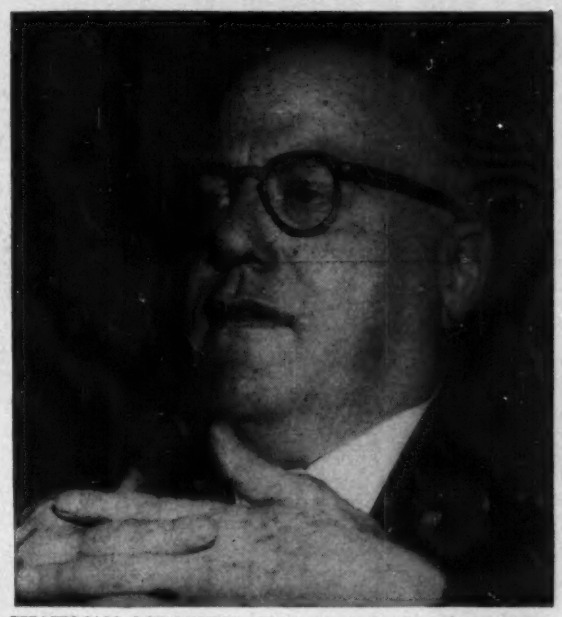
Changing Picture: It's almost certain, though, that both House and Senate will extend the law through 1954, though there will be several changes in emphasis. Heated debate in the Senate over extension of the act makes it almost certain that all of the modifications approved by the House won't become law.

The House bill exempted any material going into synthetic rubber if the end use of the rubber was civilian. (Processing chemicals would be included here.) Too, it would broaden exemptions on new durable processing equipment, and, would, for the first time, exempt standard commercial items if the Renegotiation Board felt there was enough competition among various manufacturers to protect the government.

Companies producing such directly used military chemicals as ammonia and toluene, for example, definitely favor including the last item in the law. At present, the Renegotiation Board has elected to give exemption to stock items.



SENATOR MORSE: He didn't like last-minute legislation.



CHAIRMAN MILLIKEN: He waited for the last minute.

Degree Differences: The concept of protection for the government is, of course, the basis for the law. Nobody argues this premise, it's a matter of degree.

These differences in degree were accentuated in the last-minute Congressional rush. The House bill went to the Senate just six days before adjournment. The Senate Finance Committee reported favorably two days later. Said Committee Chairman Gene Milliken, a large part of the $64-billion defense backlog will be paid to contractors in 1954, when, since excess profits taxes will have expired, the government would have little protection against overcharges.

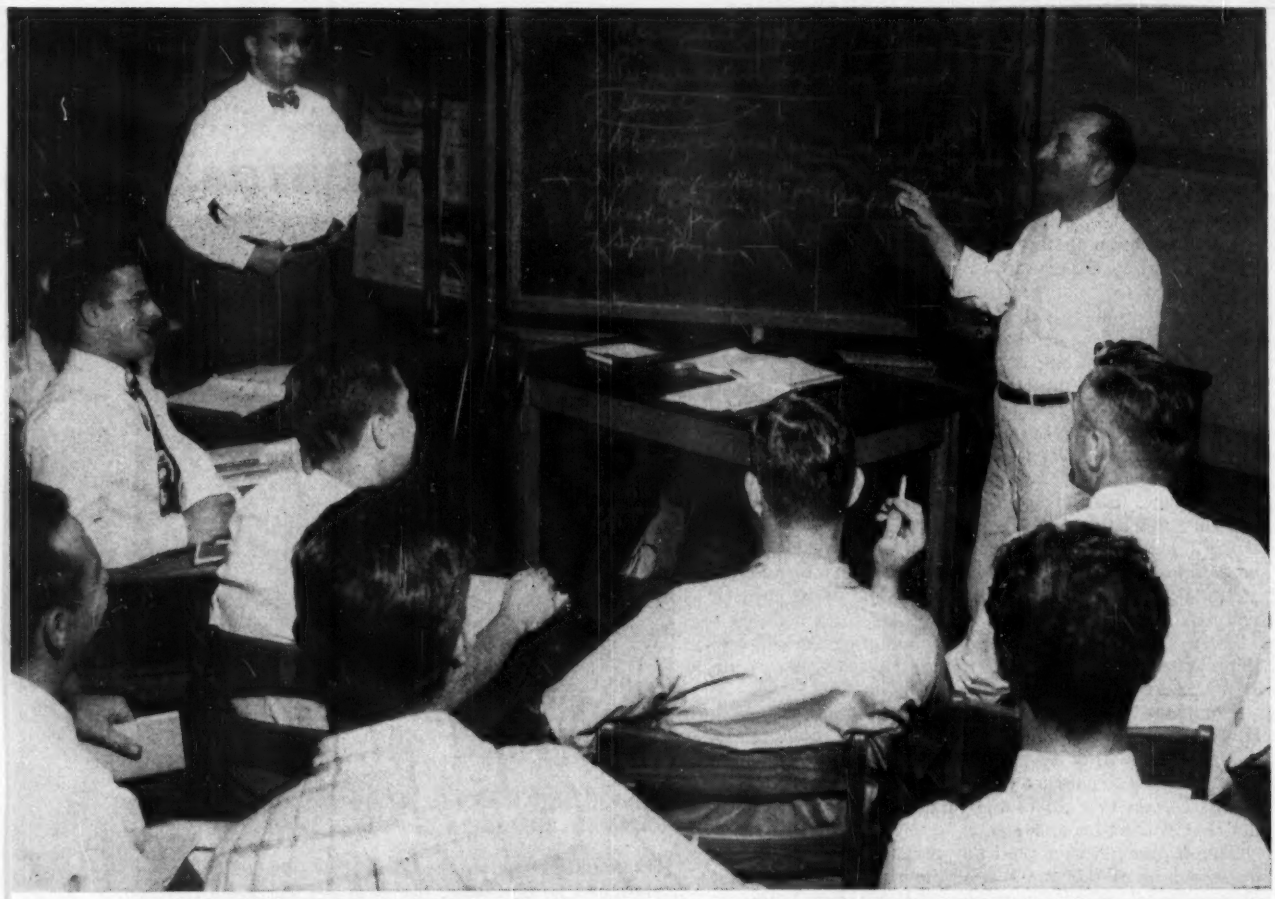
Milliken asked for a "clean bill"—one without amendments—and this brought objections from such liberals as Wayne Morse, Paul Douglas and Hubert Humphrey. They felt the standard commercial item clause would weaken the act too much; they asked for more discussion, so the renegotiation extension was tabled; but, come next session, it will probably be voted retroactively.

The Other Worry: But manufacturers who sell over $250,000 yearly to the government, and thus are liable to renegotiation, often have more worries over the procedural regulations of the Renegotiation Board.

A recent directive would have held a refiner of naphthalene, for example, liable to renegotiation if he sold to a phthalic anhydride maker who sold to an alkyd resin maker who sold to a protective coating maker who sold to an electric motor maker who sold to a direct defense contractor. While extreme, such would not have been inconceivable.

This directive brought quick complaints from industry. Because of such objections, the order was withdrawn. In addition, the board has assured industry it will continue to exempt stock items.

When Congress again takes up renegotiation, there is still uncertainty whether it will make such exemption mandatory. However, there's little doubt that the House proviso exempting sales for nondefense synthetic rubber production will be written into the law.



ICWU'S TRAINING PLAN: Union officers and stewards learn fine points of driving hard bargains with chemical companies.

No Haven for Wildcatters

Professing friendship for chemical companies it bargains with and priding itself on faithful adherence to contracts, AFL Chemical Workers Union begins its 10th year this week with over 100,000 members.

Critics call him "dictatorial," say he's too chummy toward capital, but ardently anti-Communist H. A. Bradley has no trouble in winning re-election as ICWU president, a job no one else has ever held.

It has more members in chemical plants than any other labor union; it held its 10th annual convention last week in Cleveland; and its president believes that its best friends are the chemical companies that employ its members.

This is the International Chemical Workers Union (AFL), which has contracts with 428 companies in the United States and Canada, 382 union locals, and a "defense fund" of $215,000.

Its membership figures are somewhat less definite. Veteran unionist Herbert A. Bradley, who has headed the union throughout its existence, says that its membership increased by 11.3% during the past year to a total of 115,000; but the annual statement shows that it received dues for an average of 84,300 members a month and paid into the AFL treasury a per capita tax for a monthly average of 82,400 members.

Still on Doorstep: Whichever of these figures is correct—and probably Bradley's is the closest—the ICWU still is only in the doorway of the chemical industry, which employs some 520,000 hourly paid workers in the U.S. and another 40,000 in Canada. Further organizing won't be easy; ICWU and its two big rivals* have already set up locals at plants where resistance was low, and now must hustle to win NLRB elections. Notable example at this moment is Du Pont's neoprene plant at Louisville, Ky., where ICWU is about to make its fourth attempt to gain recognition.

One thing about unionization in the chemical field: unlike organizing in some other industries, such as coal and steel, it has come about with little or no bloodshed. Bradley thinks this is because the American chemical industry didn't become big-time until the country's labor-management pattern was fairly well set. Also, he says, the chemical industry is an ever-changing field that requires leaders with vision, that such men can see how to harness capital and labor into a smooth-working team. "Too," he adds, "the profits of the industry have been such that it could stand a little pushing."

ICWU stems from a loose grouping of about 34 AFL "federal unions" whose members included about 3,500 chemical workers. The late William F. Green, AFL president from 1926 until his death last fall, picked Bradley to take charge of that council in Apr. '40, and five months later Bradley called the first industry-wide meeting. By 1944, the council had recruited about 20,000 members, and was recast into its present form as an AFL international union.

Pensions and Premiums: Carrying on the work of this union are a field

* United Gas, Coke & Chemical Workers (CIO), with around 75,000 members; and District 50 of the United Mine Workers, with possibly 20,000 or more members in chemical plants.

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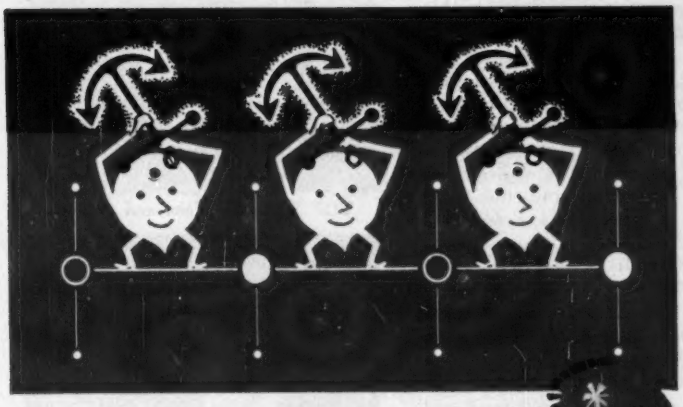

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staff of 60 organizers and an office staff of 42, including officers; total payroll for the 12 months ending last June 30 was $701,677 (president's salary was $12,000—now $14,000).

Here's what Bradley feels that this staff and the union members have accomplished:

- While fewer than 1% of U.S. and Canadian chemical workers were covered in 1940 by contracts providing for paid vacations, health and accident benefits, seniority rights and night shift premiums, "today those benefits are the accepted pattern."
- Eighty per cent of ICWU members have union security.
- Ninety per cent of ICWU members have pension plans.
- Chemical wages, 30th from the top among all industrial pay rates in 1940, now rank 12th.

Credit for these gains is handed to the union's strict policy about living up to its contracts (although "there are always a few wildcatters to spoil the record"); to its policy—opposed by some unions—of accepting plant-by-plant bargaining, on the ground that it acts as an incentive system for the various locals; and to ICWU's Research & Education Dept., headed by economist Otto Pragan.

Pragan's work covers three main jobs: contract analysis, economic research, and training of union locals' officers and stewards. His department also sends out to all locals a stream of literature on community, national and international affairs.

Over the Rough Spots: Besides having interunion competition and occasional company enmity to worry about, Bradley has had several instances of friction within his own camp.

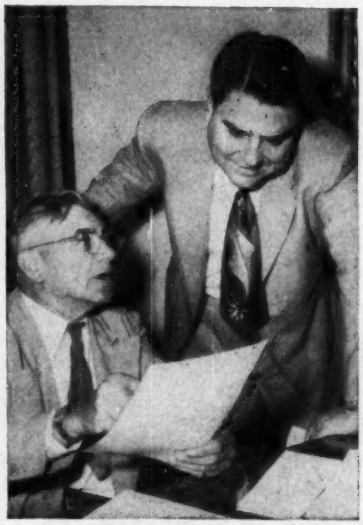
One such case occurred in ICWU's Canadian wing in 1948 when it appeared that some of the top leaders of that wing were pro-Communist. Bradley was able to oust them when a former Red testified that they had brought the Canadian chemical workers into the ICWU on direct orders of the Communist Party. The union's constitution now declares that membership is not open to any "Communist, Fascist or Bundist."

Another intraunion squabble showed up last year when Bradley was at odds with the union's secretary-treasurer, and some delegates to the 1952 convention demanded that more restrictive curbs be placed on the powers of the union president. Bradley came out on top; he was re-elected without opposition and the former secretary-treasurer was defeated by 758 to 158.

Costly Feud: With a net worth of nearly $740,000, a summer vacation camp in Canada, and with an income of more than $1 million a year, ICWU is getting along comfortably. Its members also are doing pretty well, with chemical wages at their current peak.

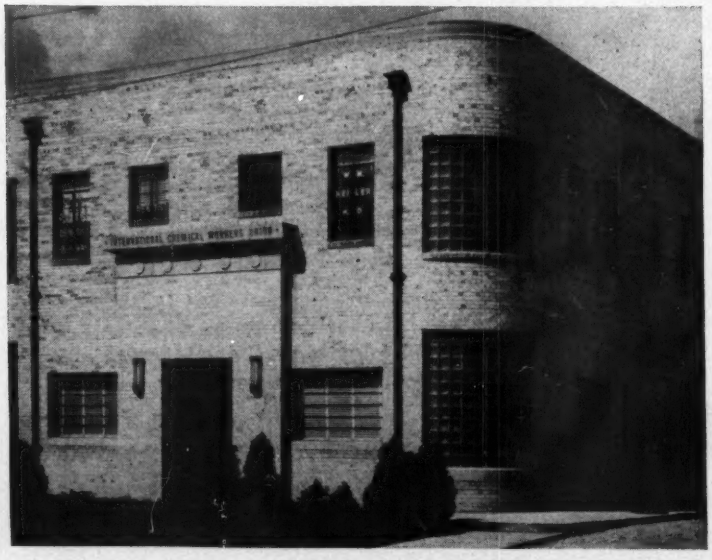
Bradley doesn't deny that his union's running feud with its CIO rival has been a drain on the resources of both unions and thus has reduced organizing activities. He now has come to endorse the no-raiding pact agreed on by the AFL-CIO unity committees, but still is skeptical about the prospects of unification of the two big federations. "When that day comes," he quips, "you can look up in the sky and see me playing a little gold piano and keeping time with my wings."

Chemical company executives who have been bargaining with ICWU may be surprised to know that its rivals have been criticizing it as a "weak and meek" union that doesn't drive good bargains for its members. On the contrary, possibly the outstanding demonstration of determination on the part of a chemical labor union last year was the seven-month strike waged by an ICWU local. With that much power in the organization, it's a good bet that ICWU will still be in business by next year's convention, which is set for Chicago; and it's a fair bet that Bradley may then be able to claim another 11.3% increase in membership.



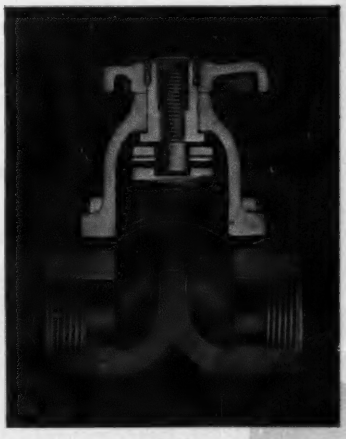
TOP BRASS*: Plans and policies.

RESEARCHERS†: Facts and figures.



ICWU'S G.H.Q.: Modern $170,000 office building is debt-free.

*President H. A. Bradley, Sec.-Treas. Marshall Shafer.
† Director Otto Pragan (*right*), Asst. Dir. Marvin Friedman, ICWU Research and Education.



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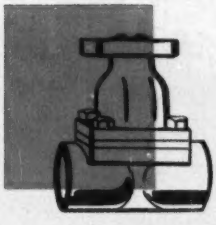
ACE SARAN or PARIAN (Polyethylene)



Here's an all-purpose valve that combines the unique corrosion resistance of Ace plastics with the efficient Saunders diaphragm principle . . . a valve that cuts costs wherever corrosive liquids or gases are handled at normal temperatures and pressures.

Body is molded of Ace Saran or Parian. Diaphragm may be rubber, neoprene or polyethylene. Corrosives never touch metal. Bonnet assembly is sealed off from the solution. No stuffing box to leak. It can be serviced without removing from line – all parts are interchangeable. All sizes from ½ to 2 in., standard pipe threads. Working pressure 50 psi. at 77 deg. F.

Use Ace Saran and Parian pipe and fittings too, to make a completely protected system. You'll also be interested in the complete line of Ace hard rubber and rubber-lined chemical equipment. Write today for bulletins.

REAGENT	ACE PARIAN RATING	ACE SARAN RATING
Sulfuric acid, conc.	Good	Good
Sulfuric acid, 80%	Good	Excellent
Sulfuric acid, 30%	Excellent	Excellent
Sulfuric acid, 10%	Excellent	Excellent
Hydrochloric acid, conc. (37%)	Good	Excellent
Hydrochloric acid, conc. (10%)	Good	Excellent
Nitric acid, conc. (70%)	Unsuitable	Good
Nitric acid, 10%	Fair	Excellent
Acetic acid, glacial	Unsuitable	Excellent
Acetic acid, 10%	Poor to Fair	Excellent
Hydrofluoric acid, 48%	Fair to Good	Excellent
Oleic acid, conc.	Unsuitable	Excellent
Sodium hydroxide, 50%	Good	Good
Sodium hydroxide, 10%	Good	Good
Ethyl alcohol (denatured)	Good	Excellent
Acetone	Good	Fair
Carbon tetrachloride	Unsuitable	Good
"Ethyl" gasoline	Unsuitable	Excellent
Benzene	Unsuitable	Fair
Xylene	Fair	Good
Lubricating Oil	Unsuitable	Excellent
Calcium chloride, 15% aq.	Excellent	Excellent
Calcium hypochlorite	Excellent	Excellent
"Duponol" ME, 10% aq.	Excellent	Excellent
Triethanolamine	Excellent	Good
Camphor Oil	Unsuitable	Excellent
Ferric sulfate, 15% aq.	Excellent	Good
Linseed Oil	Fair	Excellent
Formic acid	Good	
Saturated salt water	Excellent	Excellent

• This is partial list only . . . ask for complete data.

ACE rubber and plastic products

AMERICAN HARD RUBBER COMPANY
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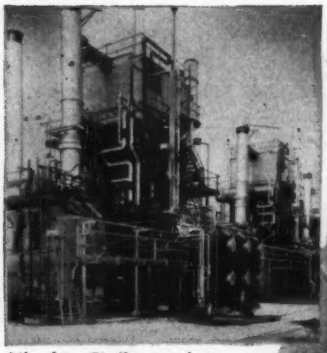
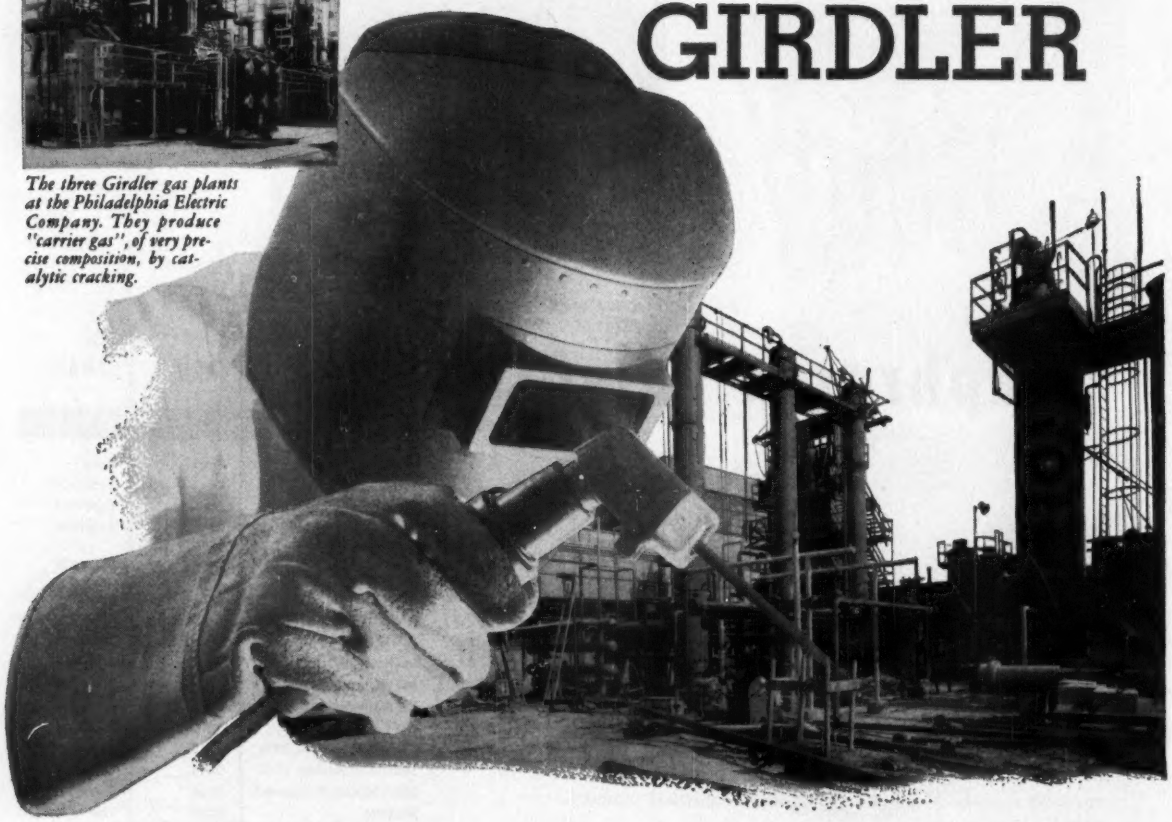


The three Girdler gas plants at the Philadelphia Electric Company. They produce "carrier gas", of very precise composition, by catalytic cracking.

THIS IS GIRDLER



GOING UP...SAFELY!
Another process plant by Girdler

AN OUTSTANDING SAFETY RECORD in plant construction is evidence of our special skill in handling jobs involving corrosive gases or fluids reacting at high temperatures and high pressures. By centralizing responsibility with Girdler, you make sure of proper coordination and sound results . . . We're equipped to handle the complete job of designing, engineering, and building. When considering new process plant construction or modernization, put Girdler's experience to work in the planning stages. For complete information, call the nearest Girdler office today.

GIRDLER DESIGNS processes and plants
GIRDLER BUILDS processing plants
GIRDLER MANUFACTURES processing apparatus

GAS PROCESSES DIVISION:

Chemical Processing Plants	Plastics Materials Plants
Hydrogen Production Plants	Sulphur Plants
Hydrogen Cyanide Plants	Acetylene Plants
Synthesis Gas Plants	Ammonia Plants
Carbon Dioxide Plants	Ammonium Nitrate Plants
Gas Purification Plants	Hydrogen Chloride Plants

Catalysts and Activated Carbon

VOTATOR DIVISION: COMPLETE EDIBLE OIL PLANTS
CONTINUOUS PROCESSING APPARATUS FOR . . .

Strained Food	Bakery Ingredients	Lubricating Grease
Salad Dressing	Confectioneries	Paraffin Wax
Soup	Citrus Concentrates	Resins
Margarine	Chemicals	Paper Coating
Lard	Textile Size	And other Products
Shortening	Shaving Cream	

THERMEX DIVISION: HIGH FREQUENCY DIELECTRIC HEATING EQUIPMENT APPLIED TO . . .

Foundry Core Baking	Rubber Drying and Curing
Wood Bonding	Plastic Preform Preheating

The GIRDLER Company

A DIVISION OF NATIONAL CYLINDER GAS COMPANY
LOUISVILLE 1, KENTUCKY

GAS PROCESSES DIVISION: New York, Tulsa, San Francisco
VOTATOR DIVISION: New York, Atlanta, Chicago, San Francisco
In Canada: Girdler Corporation of Canada Limited, Toronto

Out-of-Court Plan

With its "dividend famine" now in its 12th year, the Swiss holding company that in 1945 changed its name from I. G. Chemie to Interhandel this week is pushing a new move to get the U.S. Government to let go of the more than 90% of General Aniline & Film stock that was seized in 1942 as "enemy controlled."

Interhandel's Managing Director Walter Germann, who has made some 56 trips from Switzerland to the U.S. during the firm's five-year effort to regain the GAF shares, disclosed that Interhandel now is seeing if an out-of-court settlement can be arranged with the Justice Department's Office of Alien Property.

Germann's proposal: OAP would permit Interhandel to sell the GAF stock to Blair Holdings Corp. of San Francisco (*CW Newsletter, Apr. 11*), for $60 million, of which 50% would be cash down. Blair also would pay to the U.S. Government a "custodial fee" of 1½% of sale price for each year that OAP held the stock. Interhandel's district court suit in Washington would be dismissed, and Interhandel would invest in various American enterprises a part of proceeds from the sale.

In trying to allay lingering suspicions about triangular connections among Interhandel, GAF and the German cartel I. G. Farben, whose leaders were convicted in the war crimes trials after World War II, Germann insisted that Interhandel "is and always has been a Swiss corporation." He granted that Interhandel was formed at Farben suggestion, that for 12 years there was a dividend guarantee contract between Interhandel and Farben, that Farben had "a certain degree of control" over GAF, and that following the "friendly parting" between Interhandel and Farben in 1940, "certain relationships may have lasted for a short time after the severance."

Asked why Interhandel would be willing to sell GAF for $60 million when its net assets are around $100 million, Germann replied that this was the best offer submitted so far, and that any higher offers would still be considered. He said Interhandel would prefer to own the property itself, but that his concern was resigned to the fact that U.S. public opinion appears to insist on "Americanization" of GAF.

LABOR

Song of Sixpence: U.S. wages haven't been paid in pounds, shillings and pence for about 180 years, but recent wage increases in the chemical process industries have hovered around the sixpence level—about 7¢ in U.S. coins.

- President Eisenhower's new atomic energy labor-management panel has recommended that Carbide and Carbon Chemicals Co. boost wages for 3,500 AFL workers at Oak Ridge, Tenn., by 7¢/hour. This represents a compromise between the AFL's reduced demand for a 10½¢ rise and the 5¢ increase that Carbide and Carbon had granted to Oak Ridge production workers who are members of United Gas, Coke & Chemical Workers (CIO).
- Hercules Powder and District 50 of the United Mine Workers have agreed on an 8¢ hourly increase for all employees at the plant in Bessemer, Ala. Also included: "adjustments" ranging from 5 to 10¢/hour for various jobs.
- At Du Pont's explosives plant in Seneca, Ill., wage rises for members of Local 42, International Chemical Workers Union (AFL), will range from 5 to 7¢/hour.
- A supplemental agreement between Kopper's Co.'s Tar Products Div. and District 50, UMW, provides for an immediate 8½¢ hourly increase, plus additional 2½¢ boosts on Jan. 1 and July 1 next year.
- A 7¢ rise resulted from wage-reopener negotiations between Great Lakes Carbon and ICWU at Morganton, N.C.
- At Front Royal, Va., Allied Chemical & Dye has raised wages by 5¢/hour, retroactive to last April 1, for members of ICWU Local 538. The company also agreed to provide health insurance, increase sick benefits, and provide clothing replacements.
- Ciba Products will hike wages by 8¢/hour now, and again by 5¢ after six months for ICWU-represented employees at Kimberton, Pa.
- Calco Chemical Div. of American Cyanamid and ICWU Local 254 have signed a new contract providing for a 6¢/hour increase and other benefits for employees at Gloucester City, N.J.
- A few of ICWU's latest contracts call for more substantial wage increases—7% at Southern Chemical Cotton, Chattanooga, Tenn.; 9% at Hilton Davis Chemical, Cincinnati; 10-20¢/hour at Clarkson Laboratories, Philadelphia; 9-11¢/hour at Linde Air Products, Los Angeles; and 20¢/hour at National Varnished Products, Woodbridge, N.J., and at National Cylinder Gas, Baltimore.

•

Canadian Conciliation: With provincial government help, agreement has been reached on the dispute behind the six-week strike of 750 members of United Electrical Workers (Ind.) at the North American Cyanamid plant in Niagara Falls, Ont. Wages will be lifted by 4¢/hour, bringing the basic rate up to $1.49.

•

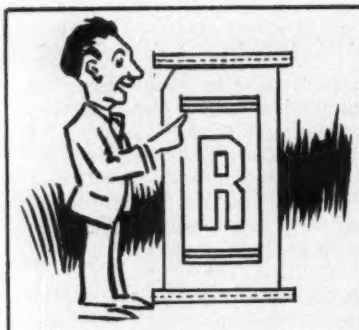
Stateside Strife: On this side of the border, several chemical strikes continued their stubborn course this week. One of them focused attention on a governor who has been mentioned as a possibility for the Democrats' Presidential nomination in 1956.

- Gov. G. Mennen Williams of Michigan has been criticized for refusing to send state police to Iron Mountain, Mich., where pickets of the CIO United Auto Workers were blocking freight trains at the strike-bound Kingsford Chemical plant. Train service resumed last week when a judge at Escanaba upheld an injunction against forceful picketing. The strike is still on, but the company says about 200 employees are back at work and production is up to 50%.
- American Cyanamid's plastics plant at Bridgeville, Pa., now idle for nearly five months because of the strike by some 600 members of District 50, United Mine Workers, may be closed altogether, the company indicates. Out of the 250 salaried employees at Bridgeville when the strike started last April, 50 have already been released, most of the rest will be furloughed and transferred, and Cyanamid is "reconciled to closing the plant completely"—although this decision hasn't yet been made.
- Sterling-Winthrop Research Institute, Rensselaer, N.Y., is fighting back in the strike by ICWU Local 61. The company is asking a court to enjoin "illegal" picketing, and is petitioning the National Labor Relations Board for an election to determine whether the union actually represents all production, maintenance and laboratory employees. The local's 985 members have been on strike against both the institute and the affiliated Winthrop-Stearns plant since June 8.

Not Rosy in Britain

In stark contrast to happily expectant predictions for all-time sales records from most representative companies in the U.S. this year, Britain's Imperial Chemical Industries has just issued ominous warnings that its export sales for chemicals in 1953 may seriously cut into over-all sales figures . . . may drop substantially lower than the record £62 million of 1952.

Major reason for the expected drop,



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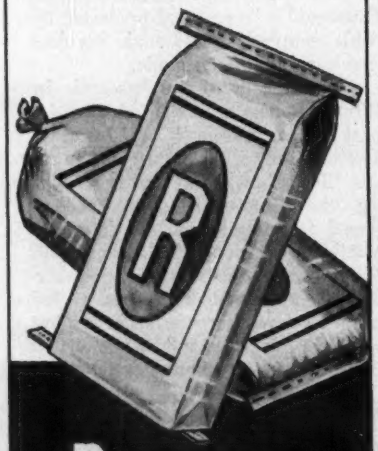
THE RAYMOND BAG COMPANY
Middletown, O.



RAYMOND
MULTI-WALL
PAPER SHIPPING
SACKS

BUSINESS & INDUSTRY . . . . . .

ICI points out, is the blow dealt to British exports by a lack of sterling in a number of traditional markets—namely Argentina, Brazil, Egypt, Turkey.

Exports of alkali to these countries started dropping off in the latter part of 1952; in the first quarter of 1953, shipments dwindled off to almost nothing.

Adding to the problem ICI says its facing: severe competition is building up from West Germany and Japan has been pressing the U.S. for dollar aid bids for ammonium sulfate, "some of which are alleged to have been secured at prices reported at below production costs."

LEGAL. . . . . .

Exacting Laws: Few states have more rigorous laws on food purity than Wisconsin, where a bakery supply company recently was fined for selling a product that contained benzoate of soda. That compound is permitted as a preservative in many states, but Wisconsin law specifically bars the use of benzoic acid or benzoates.

Wisconsin bakers also are concerned about a provision of the new state bread standards, which in their original form required that bread containing certain softeners bear the phrase, "with added mono—and diglycerides," on the label. Fearing that this might alarm customers, the legislature added the words, "a harmless softener"; but many bakery operators believe that this "is even worse than the original statement."

•

Silver Lining: The government's antitrust suit against Aluminum Co. of America *(CW, Aug. 15)* might turn out to be a good break for Wheland Co., Chattanooga, Tenn. That company wants to build a $25-million alumina plant somewhere on the Atlantic Coast and a $60-million reduction plant in the Tennessee Valley. It has a DPA certificate for rapid tax write-off of 85% of the costs, but shelved those plans after Alcoa contracted to buy 1.2 billion lbs. of aluminum from Aluminium, Ltd., of Canada. Wheland Pres. Gordon P. Street says that if the Justice Dept. succeeds in having that contract canceled, he's hopeful that he can then get a government loan guarantee that would make the financing possible.

•

Hearings on Sweets: Should coumarin be permitted as an optional ingredient in chocolate candy? Should ice cream made from vegetable fats be admitted into the legal category of ice creams? These and similar questions are on the agenda for the Food & Drug Administration, which seeks evidence that may be used in amending FDA regulations. Written arguments on ice cream definitions and standards will be received up to Aug. 31, and a hearing on coumarin in chocolates will be held on Sept. 15.

•

Thirsty Cyanamid: Attorneys for the Georgia towns of Thunderbolt and Pooler have objected to American Cyanamid's request to be allowed to pump 6 million gal./day of water from wells to be drilled at its plant site east of Savannah. The objection is based on fears that large-scale pumping might cause salt water to infiltrate the area's underground water basin.

•

Modesty Directives: In three recent cases, the Federal Trade Commission has directed that pharmaceutical companies use more restraint in talking and writing about their respective products:

- Reliance Pharmacal Co., Nevada City, Calif., got a cease-and-desist order forbidding claims that its "Artex" preparation will cure rheumatism and arthritis; or that its ingredients (aspirin, calcium succinate, para-aminobenzoic acid, thiamin chloride) protect and rebuild tissues.
- Mme. C. J. Walker Manufacturing Co., Inc., Indianapolis, Ind., is ordered to make more moderate claims for its hair and scalp preparations.
- A. C. Liepe Pharmacy, Inc., Milwaukee, Wis., is required to refrain from claiming that its ointments and dusting powders will cure varicose disorders.

•

Nuclear Settlement: Although a $10-million action had been filed in the U.S. Court of Claims, owners of a patent on an isotopes production process have settled their claim against the U.S. Atomic Energy Commission for just $300,000. Among the seven who had applied for and received the patent in 1940: Enrico Fermi, who later played a leading role in atomic energy development in the U.S. during World War II; and Bruno Pontecorvo, who flew from England to Finland three years ago and is believed to be in the Soviet Union. The patent was granted on the basis of work by the seven scientists in Rome prior to 1934.

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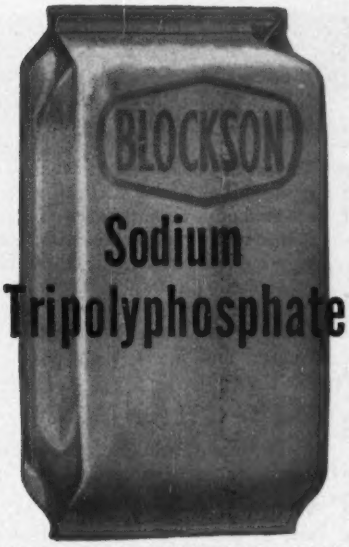
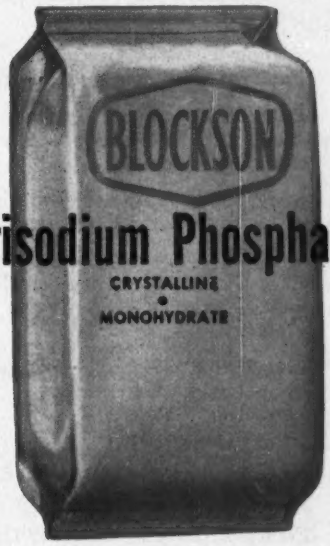
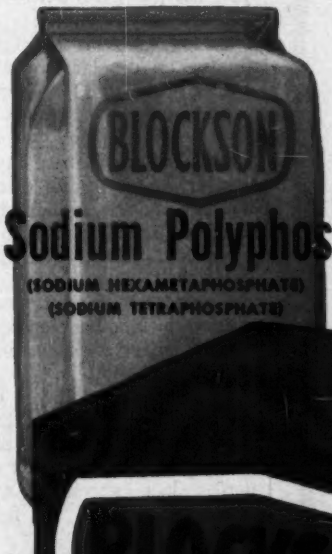
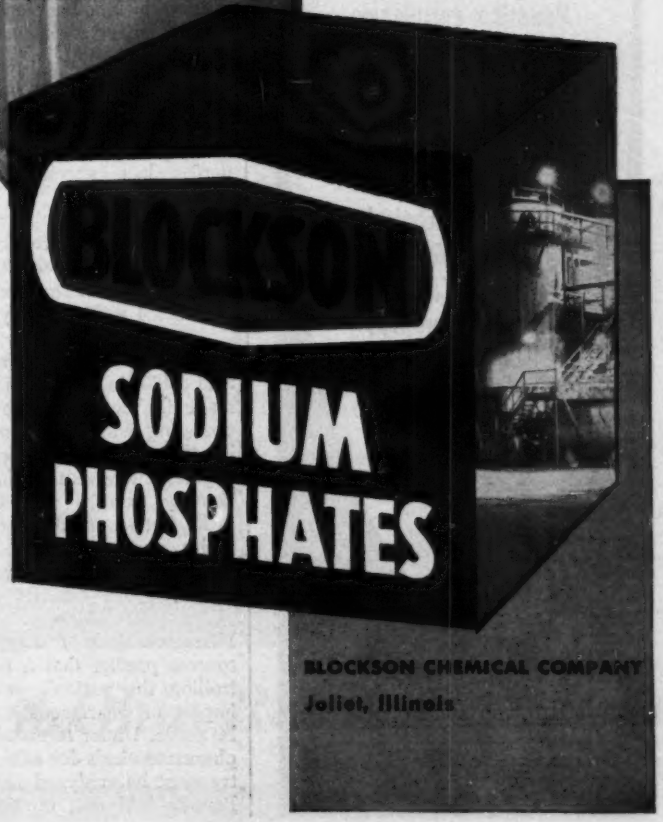
No Skull & Crossbones: Boric acid, an old-line drugstore item, won't have to put on a "poison" label in Pennsyl-







Sodium Polyphos is Blockson's brand name for a water soluble Glassy Sodium Phosphate with the desirable characteristics of Sodium Hexametaphosphate and Sodium Tetraphosphate.



ALSO MAJOR PRODUCERS OF:

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ANHYDROUS • CRYSTALLINE

MONOSODIUM PHOSPHATE
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SODIUM FLUORIDE

SODIUM SILICOFLUORIDE

HYGRADE FERTILIZER

BERKSHIRE

BERKSHIRE CHEMICALS

BORON
MERCURIALS
CARBAMATES
ZIRCONIUM CHEMICALS
VANADIUM CHEMICALS
AGRICULTURAL MAGNESIA

Zirconium Basic Carbonate Cake
Zirconium Acetate Solution
Zirconium Sulphate Solution
Zirconium Oxide
Zirconyl Nitrate
Zirconyl Sulphate
Sodium Zirconyl Sulphate
Zirconium Oxychloride, Reagent
Sodium Perborate
Potassium Persulphate
Potassium Nitrate, Refined
Potassium Nitrate, Agricultural
Epsom Salts, USP and Technical
Saltcake
Potassium Carbonate
Boron, Amorphous
Ammonium Metavanadate

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vania. A state representative had introduced a bill that would have required such labeling (*CW, Aug. 1*), but the majority in the state legislature voted it down before adjourning. A similar bill came up in the New York City Council in 1944, but met an early death.

FOREIGN . . . . .

Sulfuric Acid/Great Britain: The United Kingdom Minister of Materials has freed sulfuric acid and ground sulfur from price control in Great Britain. Both have been under price control since 1951.

•

Sulfuric Acid/West Germany: West Germany's average monthly output of sulfuric acid in the first half of this year has jumped 5% over comparable figures last year—now stands at 124,000 tons/month. Monthly average production of chlorine (25,000 tons) and of caustic (33,800) also top last year's figures.

•

Rayon/India: Japanese rayon yarn is moving in on India's domestic market, forcing the Indian rayon manufacturing industry into an $8-million expansion. Extent to which Japanese industrialists are striving is seen in the presence of an organized trade mission in Bombay, engaged in discussing prices with Indian silk mills and rayon importers.

India's National Rayon Corp., now turning out 1.1 million lbs./year, is implementing a 25% increase in output as fast as it can, but other companies lack necessary capital, are scratching around to find foreign funds.

Current Indian production of rayon yarn now totals around 2.5 million lbs. annually; Japanese exports to India are near 4 million lbs./year.

•

Phosphoric Acid/Austria: Phosphoric acid (99%) in flake form is now being made in Vienna by the Hardig Co., operating with a method discovered by the La Fonte Electrique Compagnie, Switzerland. The acid's consistency permits packing in plastic sacks (jute-covered), permits dilution with water to any desired percentage. No output figures have been estimated.

•

Pharmaceuticals / Egypt: Egyptian sources predict that a new law controlling the nation's production and import of pharmaceuticals will soon be made. Under terms of the law, all pharmaceuticals for sale in the country must be analyzed and authorized. Permits will not, on the whole, be granted for importing pharmaceuticals identical with, or closely similar to, products manufactured in Egypt.

•

Technical Aid/Japan: Two U.S. concerns—Monsanto Chemical and Cluett-Peabody—have completed arrangements with leading Japanese interests to provide technical aid to the Japanese spinning industry. Japan in turn is planning to put up technical and financial aid, offer it to interests in Central and South America.

KEY CHANGES . . .

J. Delano Hitch, Jr., to president, The Dorr Co., Stamford, Conn.

William B. Graham, Maurice M. Nesset, to president and executive vice-president, Baxter Laboratories, Morton Grove, Ill.

Warren E. Hill, to executive vice-president, Plax Corp., Hartford.

Frank W. MacClean, to general manager, Reynolds Metals' plastics division, Gary, Ind.

A. R. Schramm, to associate director of sales, Abbott Laboratories, North Chicago.

F. S. Ulrich, to vice-president for industrial sales, General Paint, San Francisco.

Chandler T. White, to manager of operations, General Aniline & Film, Rensselaer, N.Y.

Grayton F. Dressel, to inorganic chemical production manager, Dow Chemical, Midland, Mich.

Francis P. LaBelle, Clyde P. Orr, to assistant chief engineer and chief chemical engineer, Monsanto's phosphate division, Anniston, Ala.

Elliott M. Harold, to plant manager, Davison Chemical, New Orleans, La.

Russell G. Dressler, to technical assistant to president, Atlas Powder, Wilmington.

J. K. Dixon, to assistant to director, American Cyanamid's Stamford, Conn., laboratories.

E. W. Kiel, to chief chemist, Goodyear Tire & Rubber, Gadsden, Ala.

KUDOS . . . . . .

Hilton Ira Jones, American Institute of Chemists' Honor Scroll, 1953.

DIED . . . . . .

Lunsford Richardson, 66, board chairman, Vick Chemical Co.

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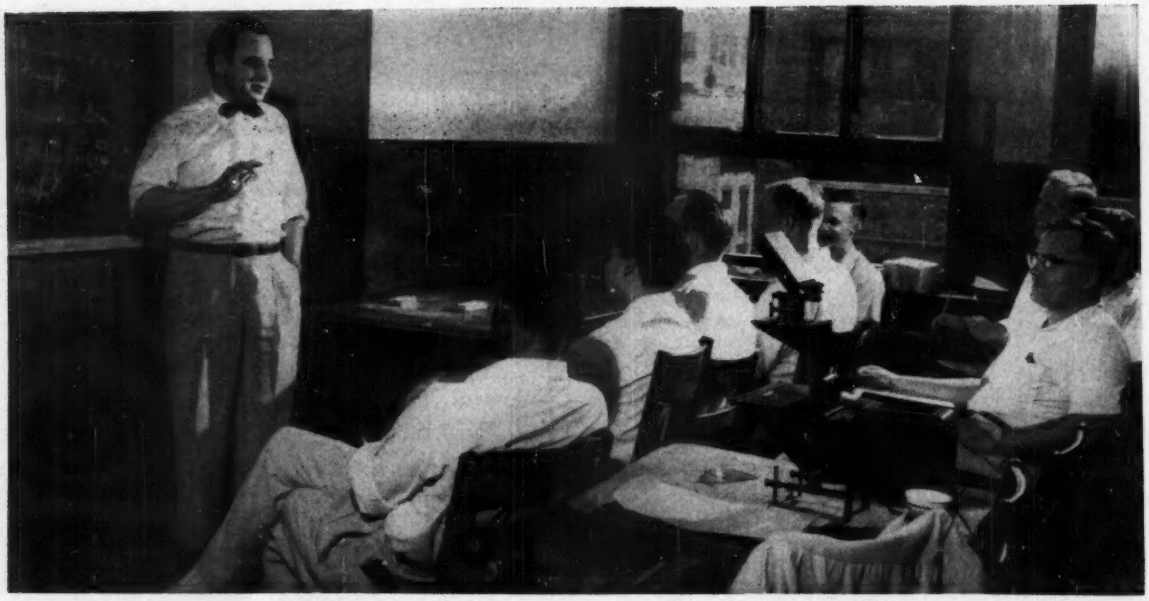
Baltimore & Ohio Railroad

doing things



CLASSROOM SKULL SESSIONS bring industrial group up to date on polymerization theory. Prof. Overberger puts across a point in lecture on mechanism of emulsion polymerization.

Lesson in

DETERMINATION OF POLYMERIZATION RATE of styrene is important experiment. Instructor Senta-Stephanie Rogers makes dilatometer point to Interchemical's Bastio, Beacon's Blake, Stahl Finish's Katz and Tennessee Corp.'s Johnston.

EACH year, when the dog days descend upon New York City, a hardy band of industrial researchers converges on the heart of Brooklyn's downtown business district. Chemists from all parts of the country make the trek, one of several such summer invasions fostered by Polytechnic Institute of Brooklyn. Lure for the unseasonable migration: summer laboratory courses sponsored by Polytech's Graduate School of Chemistry and Physics under the auspices of the Institue of Polymer Research.

Better known as the "polymer clinic," lab (and classroom) sessions get under way at the beginning of June, run for the best part of the summer. Their function: to provide industry men with the opportunity of gaining advanced instruction in the techniques of modern polymer chemistry. Individual courses are short (last one or two weeks) but intensive (average 10 to 11 hours a day), predicated on the Polytech belief "that mature scientists can master the techniques involved in a very short time." Faculty, headed by Polytech's

IN LAB, fundamentals come first. Monsanto's M. H. Wilt tries hypo withdrawal technique on monomer sample.

SEALING reaction tube, lab assistant commands gaze of Polymer Corp.'s Koch, Olin Industries' Kay, Navy's Thelen.

Polymer Progress

FURTHER along in same experiment, Minnesota Mining's Japs determines residual styrene monomer.

IMPORTANT tool of polymer chemist, refractometer is demonstrated for Japs, Connecticut Hard Rubber's Kidwell and Koch.

renowned Herman Mark, is top-drawer.

For a student's view of the polymer proceedings, the CW Camera sat in on the latest session of "Progress in Polymerization and Copolymerization Techniques"—one of three courses on the clinic's curriculum. (The others: "Industrial Applications of X-Ray Diffraction" and "Molecular Weight and Shape of Macromolecules in Solution, Including Polyelectrolytes.")

Also in attendance were researchers from a government agency (Naval Ordnance) and 12 industrial companies. The dozen: Beacon Co.; Bell Telephone; Connecticut Hard Rubber; Franklin Glue; Interchemical; Minnesota Mining & Mfg.; Monsanto; Olin Industries; Polymer Corp.; Stahl Finish; Swift & Co.; Tennessee Corp.

For five days, from early morning to evening of each day, the group absorbed information on polymer research and polymerization technique from course mentor Prof. Charles Overberger and a staff of instructors. At the bench, students put their new-found knowledge to practice in experiments involving the use of dif-

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Warehouse Stocks Conveniently Located
throughout the Country

*REGISTERED TRADEMARK

LUCIDOL DIVISION
NOVADEL-AGENE CORPORATION
BUFFALO 5, NEW YORK

ferent catalysts, activators and modifiers; rapid and reproducible withdrawal of samples; determination of particle size, molecular weight and gel content.

For most registrants the brief Brooklyn sojourn represents a paid opportunity for professional improvement. And back on the job, their new skills and knowledge should more than repay their employers' investments.

Atomic Activity

Atomic Energy Commission is very much in this week's research news.

• Just released for nonexclusive, royalty-free licensing are 28 government patents held by AEC. Included in the newly liberated group: 2,639,-074, apparatus for packaging a volatile, hygroscopic substance without exposing it to the atmosphere; 2,640,-935, mass-spectrometer control improvements; 2,643,341, mass-spectrometer ion source; 2,645,610, process for separating isotopic ions; 2,645,-941, device for collecting samples of atmospheric dust; 2,647,213, isotope separating apparatus; and 2,647,-629, flotation method of separating uranium values from ores. Commission-held patents and patent applications released for licensing now total 593.

• In another sweeping move, AEC awarded 47 unclassified physical research contracts to as many universities and private research institutions. Of potential industrial value in the new awards: graphitization of carbon (Alfred University); scaling of zirconium in air at elevated temperatures (Case Institute of Technology); thermodynamic properties of sodium vapor (Columbia University); structure of fluorocarbons (Cornell University); synthesis and properties of ion-exchange resins (University of Louisville); metal ion chelate complexes (Purdue Research Foundation).

• Well under way and yielding results is an AEC-sponsored project aimed at more efficient extraction of uranium from phosphate rock. To further the study, Rutgers University's Ulrich Strauss (holder of the AEC contract) has—according to Rutgers—developed the first accurate technique for determining the structure of polyphosphates—chief subjects of the probe. A fundamental study, Strauss' work could lead to practical application outside the field of uranium extraction.

•

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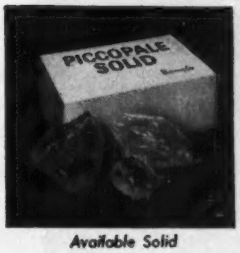

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Life ...on the

AERO* Sodium Ferrocyanide for Trace-Metal Removal Increases Cleanout Interval for Tin Plating Bath and Improves Plating

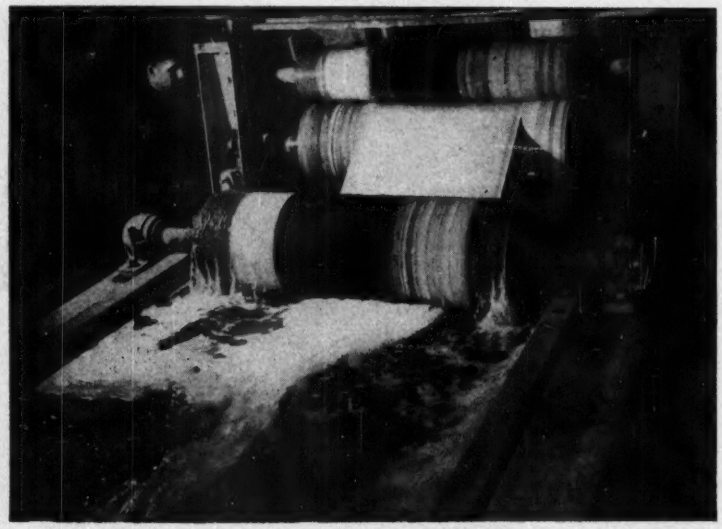
Laboratory and field reports have shown that under proper conditions, sodium ferrocyanide will precipitate traces of most heavy-metal ions from aqueous solutions.

An interesting commercial application of sodium ferrocyanide as a sequestering agent is in the electrolytic manufacture of tin plate.

Weirton Steel Company Division of National Steel Corporation operates at Weirton, W. Va., the world's largest and fastest electrolytic plating line for the production of tin plate. Weirton Line No. 4, which went into production in March 1950, coats steel strip continuously at speeds of more than 2000 feet per minute.

A halogen-process, acid electrolyte—principally stannous chloride—is stored in a 15,000-gallon tank and circulated continuously through the two 100-ft. long plating sections used. Initially, iron contamination in the electrolyte caused a heavy tin-rich sludge to form and collect in the entire plating section. Weekly shut downs were necessary for a thorough cleanout of this sludge. Now, the addition of from 1 to 2 grams per liter of AERO Sodium Ferrocyanide sequesters the troublesome iron, greatly reducing its effect on sludge formation. The time between cleanouts has been extended to approximately three months. This means a major saving in lost production time.

AERO Sodium Ferrocyanide is also being used as a sequestering agent in the purification of products made by fermentation processes, such as citric acid and wines, and in removing trace copper after desulfurization of hydrocarbon oils. If you have a problem with heavy-metal contaminants, consider the use of AERO Sodium Ferrocyanide.



Two 100-ft. long plating sections are on Weirton No. 4 Line. Lower section coats one side of strip, upper section second side. Coatings of different thickness can be applied to each side of strip, saving scarce tin. Each section contains 12 in-line cells, which can be cut in or out independently to vary coating thickness.

Strip unrolls from two uncoilers at beginning of line. As strip from one is exhausted, another is made ready for automatic welding to end of first. Immediately ahead of welder is an 80-ft. pit which maintains a loop of slack to allow for welding time.

At end of line, coated strip passes through the high frequency inductive field "reflow" tower. This heats the tin to slightly higher than its melting point, converting dull finish into high luster tin plate seen at bottom of photo. Reflow treatment gives higher corrosion resistance, easier soldering, better handling. Water quench sets plate.

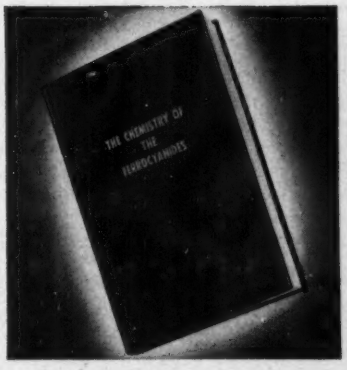
Chemicals for the Chemical Industry

Chemical Newsfront

New Treatise on a Familiar Chemical

Yellow Prussiate of Soda was discovered just 200 years ago in 1753, although the coloring properties of its parent compound, Prussian Blue, had been known almost forty years earlier. It was Macquer who showed that Prussian Blue could be treated with caustic to form a soluble yellow salt.

Since its discovery, sodium ferrocyanide has been widely used, and is still generally considered in terms of a raw material for the manufacture of a number of dyes and pigments. However, it is a much more versatile chemical, and is finding an increasing number of applications in the chemical and chemical process industries.

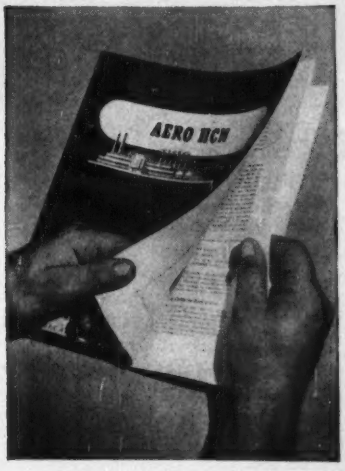


A recent volume on the ferrocyanides—their history, chemistry, and applications—forms the seventh and latest volume in Cyanamid's Nitrogen Chemicals Digest Series. "The Chemistry of the Ferrocyanides" belongs on the shelves of every industry using such versatile compounds and will be of value to scientists in schools and universities. Use the attached coupon when requesting your copy.

Announcing a New Cyanamid Technical Service Bulletin on the Physical Characteristics, Handling, and Storage of AERO* HCN the up-to-date text on the subject for the chemical industry

AERO* HCN (liquid hydrocyanic acid), is an extremely toxic and highly reactive chemical that is used in large quantities by agriculture and industry.

Intensive studies have shown that this important industrial chemical *can* be handled safely with proper precautions.



This new bulletin gives detailed and precise instructions on the handling of AERO HCN, as well as on its stabilization against decomposition and polymerization. Included also are descriptions of the safety precautions and best-known emergency measures to be taken upon exposure to HCN.

The 17-page booklet contains specifications and physical properties of HCN, descriptions of standard shipping containers and their handling, a discussion of the toxicity and stability of HCN, and an outline of first-aid measures to be followed in case of accidents.

Everyone who uses HCN should have this important and up-to-date text. Use the attached coupon to send for your copy. *Trade-mark

American Cyanamid Company, Manufacturers Chemicals Department CWS-53
30 Rockefeller Plaza, New York 20, N. Y.

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- ☐ THE CHEMISTRY OF THE FERROCYANIDES, Vol. VII, Nitrogen Chemicals Digest Series
- ☐ AERO HCN, Liquid Hydrocyanic Acid for Chemical Processing

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diphenyldimethylpropanes is the key to a new group of potent contact insecticides reported by researchers of Merck & Co. (Rahway, N.J.). Correlating structure with activity, the Merck chemists find that the fundamental requirement for insecticidal activity of the DDT type is a diphenylmethyl structure substituted at the *p,p'*-positions by halogen, methyl or methoxy. Also important is a relatively nonpolar group (attached to the central carbon atom) of sufficient bulk to hinder the rotation of the aryl rings.

•

Cobalt Cut: Mounting demand for cobalt-60 radiography sources stands behind a new and substantial cut in the cost of the isotope. According to Tracerlab Inc.'s revised schedule, prices now range from $160 for a 10-millicurie source to $600 for a 10-curie source. The old prices: $195 and $1,115, respectively.

•

Short-Chain Ouster: A new technique for removing very short-chain fatty acids (caproic, caprylic, capric) from coconut oil is the news from chemists of France's Laboratoire National des Matieres Grasses (Marseilles). It's a direct inter-esterification procedure hinged on heating a mixture of coconut oil and peanut oil methyl esters with a small amount of caustic. Result: volatile methyl esters and short-chain acids are replaced in the coconut oil glycerides by long-chain peanut oil acids.

•

Seeing is Believing: Under a recently negotiated contract with Foreign Operations Administration (successor to Mutual Security Administration), the National Academy of Sciences will bring to the United States 150 of Europe's most promising young scientists. The Europeans will study at our universities, work with American research people for periods up to two years. Then it's back to their native lands to apply what they have learned. Object: to spur industrial and agricultural productivity in Western Europe. The scientific influx is

Nuclear Pattern-Makers

ELECTRONS on the rebound are enabling these Stanford University scientists to probe more deeply into the atomic nucleus than has ever before been possible. They are (*l. to r.*) Harry R. Fechter, Robert Hofstadter and John McIntyre, inspecting the new electron-scattering apparatus (*CW, Aug. 22*) with which they achieved this goal. Here, in a nutshell, is how the device works: high-speed electrons, diverted from a linear accelerator through the pipe at left, strike target metals within the drum-like chamber; scattered into significant patterns by the target nuclei, the electrons emerge through the long aluminum window (to which Hofstadter is pointing), pass through a small porthole to a magnetic field where they are measured. Already, data obtained with the instrument warrants a new concept of nuclear structure.

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scheduled to start early this fall.

•

Second Stringers: U.S. Dept. of Agriculture's Southern Regional Research Laboratory (New Orleans, La.) has just reported the results of its evaluation of new acetostearins and aceto-oleins as secondary vinyl plasticizers. Using di-2-ethylhexyl phthalate, tricresyl phosphate, Santicizer 141 and dioctyl sebacate as primary plasticizers, eight acetoglycerides were tested in the preparation of sheets of a polyvinyl chloride-polyvinyl acetate copolymer. Says the USDA: "Use of the fats with the first three plasticizers improved one or more plasticizing qualities . . . The fats should prove to be suitable extenders for dioctyl sebacate."

•

Proving the Pudding: Oregon State College biochemists have discovered a new bacterial growth factor that could be important to human and animal nutrition. It's glucosyl-glycine, ordinarily found in liver, yeast, milk and a number of other foods. Easily formed by the interaction of common food constituents (glucose and glycine), the compound probably is produced frequently during cooking. If glucosyl-glycine does prove beneficial to humans, it could explain why cooking often adds nutritional values to foods. The Oregon State discovery is an outgrowth of a search for new vitamins and growth factors sponsored, in part, by Swift & Co.

•

Building Plans: Construction is due to begin this fall on a new research laboratory at Woodstock, Ill., for Morton Salt Co. The new facility, when complete, will house Morton's principal research activities in catalysis, organic and inorganic chemistry. Plans call for a 400,000-cu.-ft. building, an initial staff of 35 to 40 chemists. But provision is being made for a threefold expansion when and if the need arises.

•

Corrosion Advance: Researchers of National Bureau of Standards have obtained promising results in their efforts to adapt the interferometer to laboratory corrosion studies. With the optical instrument, surface corrosion of only a ten-millionth of an inch may be measured.

Here's how it's done: specimens (e.g., glass, porcelain, enamel, quartz, silicates, metals) are ground and polished to optical flatness, immersed to half their depth in corrosive solutions for a specified period of time. Upon removal the test materials are rinsed, dried and covered with an optically flat quartz plate. Next, the interferometer determines optical interference fringes that serve as a measure of change in specimen thickness.

By means of the new technique, several interesting and unexpected observations were made. For example, swelling of the exposed surface, rather than chemical attack, was found in a number of cases. Crystalline quartz reacted in this way after two weeks in acid at 80 C; brass, too, showed signs of swelling after immersion in neutral solutions, was definitely attacked by strong acids and bases. Of the metals studied, only platinum survived the tests unscathed.

•

Drug Hopefuls: Progress in the chemotherapeutic fight on influenza is spelled out in the report of Oregon State College researchers Pilcher, Trosper and Soike. The Oregon State team has found (*CW Newsletter, Aug. 22*) at least two drug hopefuls: isopropyl biguanine hydrochloride and benzoyl guanylurea; both have the ability to slow the growth of flu virus in chick embryos.

• Also promising is a series of piperazine carboxylates synthesized by Lederle Laboratories (division of American Cyanamid Co.) chemists. Anticonvulsants rather than anti-influenza agents, they're being eyed for possible value in treating leprosy.

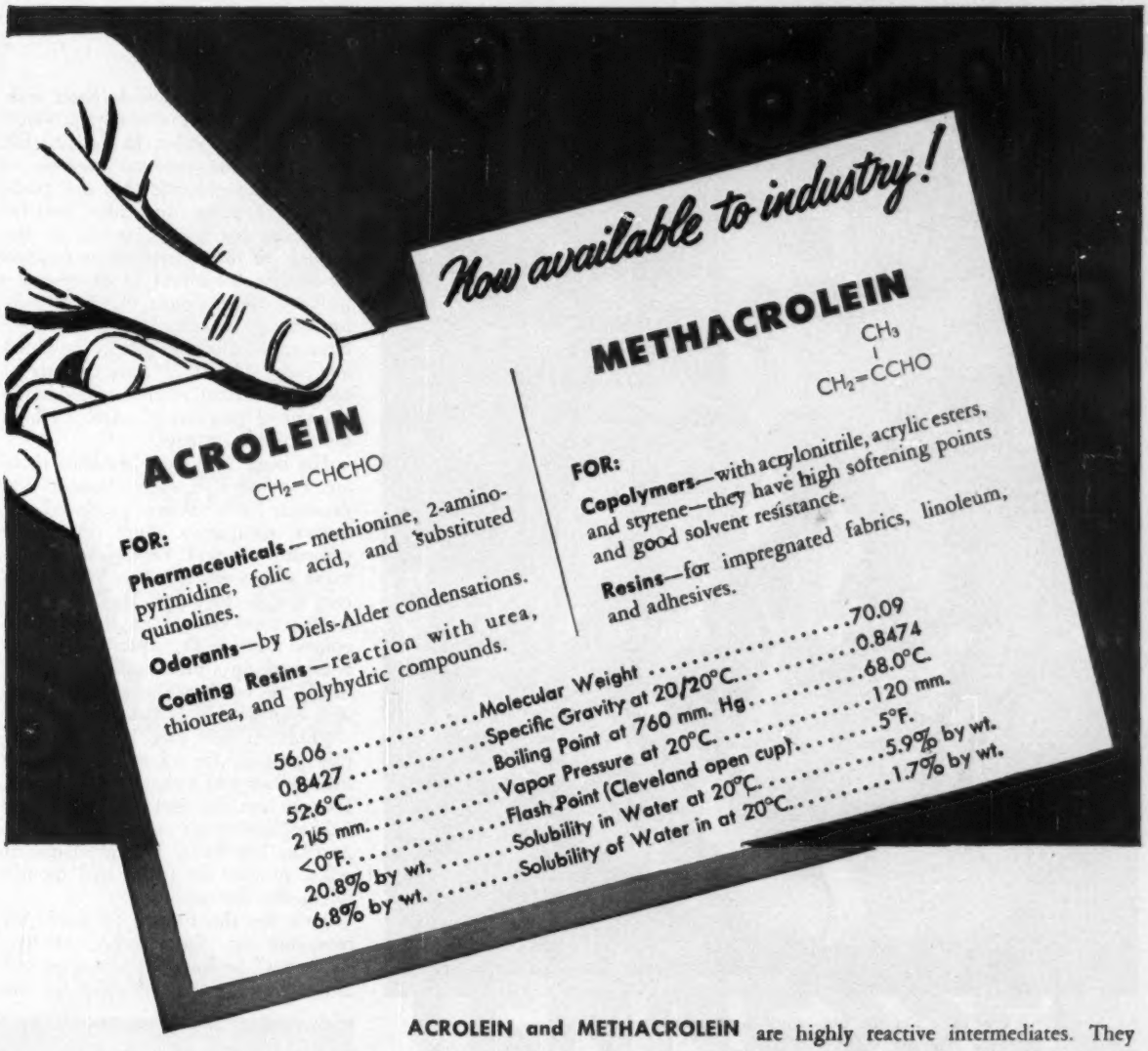
•

Finance Plan: The 1953 "Heroes of Science" stamp issue, distributed by Worcester Foundation for Experimental Biology (Shrewsbury, Mass.), will be available within a fortnight. For sale to the public, the stamps constitute a novel research financing plan; Worcester Foundation uses proceeds from the sale to support its biochemical research projects in a spate of vital health fields. On this year's stamp: 17th century physiologist William Harvey.

•

Coming Up: University of California's 1953 Conference on Nuclear Engineering will get under way in less than a fortnight. Date: Sept. 9-11. Place: Berkeley. On the agenda: 10 technical sessions dealing with non-military aspects of nuclear technology. A limited number of transcripts of the conference proceedings will be available at a cost of $7.50 from California Book Co. (Berkeley).

• Milwaukee will be the scene of General Electric Co.'s upcoming (Sept. 14-18) X-ray diffraction course. A stable of X-ray diffraction authorities will be on hand to hear registrants' problems, discuss significant new developments in applying X-ray techniques.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52.6°C. Boiling Point at 760 mm. Hg 68.0°C.
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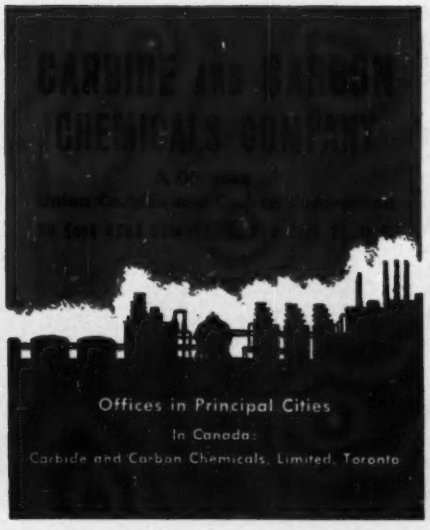
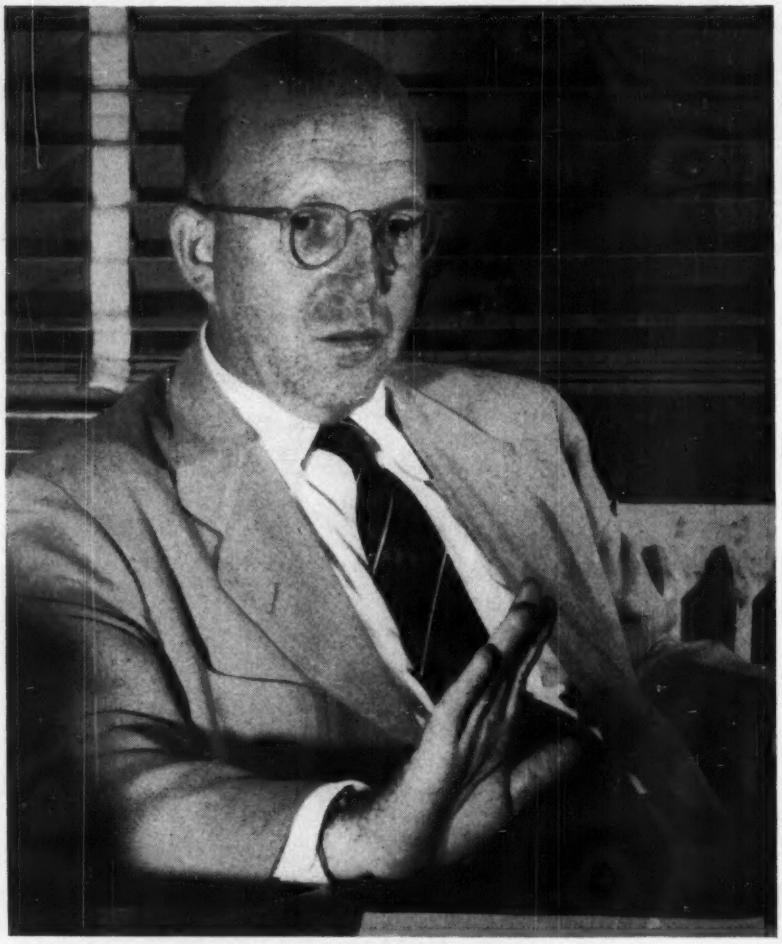
ACROLEIN and METHACROLEIN are highly reactive intermediates. They undergo reactions characteristic of both unsaturated compounds and aldehydes. The conjugation that exists between the double bond and the unsaturation of the carbonyl group increases the reactivity of both groups. These groups can be made to react either simultaneously or individually—the ethylenic groups with halogens, halogen acids, 1,3 dienes, alcohols, and mercaptans—the aldehyde groups with anhydrides and dibasic organic acids, Grignard reagents, alcohols, and HCN. Acrolein and methacrolein are shipped containing 0.1 per cent hydroquinone to inhibit polymerization.

For further information on either of these materials call or write the nearest Carbide and Carbon Chemicals office *today*. Ask for the technical bulletins "Acrolein" (F-7389) and "Methacrolein" (F-7620). These bulletins will provide you with additional data on the physical and chemical properties of acrolein and methacrolein. They will also serve as a permanent reference for your work.





CONSULTANT SPITZ: For the big, solution of problems; for . . .

Profits in Problems

All the economic weather vanes and business barometers gauge 1953 as one of the biggest years yet, as far as chemical production is concerned. These predictions, of course, are unalloyed joy to executives in the industry. But to the man who runs the plant, they're a mixed blessing, for he realizes that while he's harvesting a bumper crop of salable chemicals, he's also often deluged by a record quantity of by-products for which there's no ready market.

The ideal solution to his problem is either to find a market for his products or to convert them into something for which there is a market. A successful exponent of the latter approach is Marathon Corp.: it has built a whole family of chemicals on its sulfite liquor waste, this year has expanded its chemical production so that it has actually had to buy spent sulfite liquor from an outside source. But Marathon is by no means alone in the field. Du Pont, for one, has had a Salvage and Reclamation Division going since 1907,* has recently stepped up its program to the point where it's selling about $45,000 worth of "waste" products a month.

Last week CW interviewed a man who has taken another step in that same direction. He's Albert Spitz, a consultant who has found a profitable sideline in upgrading by-products. Spitz's first (and most lucrative) love is designing chemical plants and materials-handling systems. But, like many consultants, he found himself with spare time between his big jobs and decided to put it to use by working up package-processes to upgrade the millions of pounds of undesirable by-products generated by the process industries.

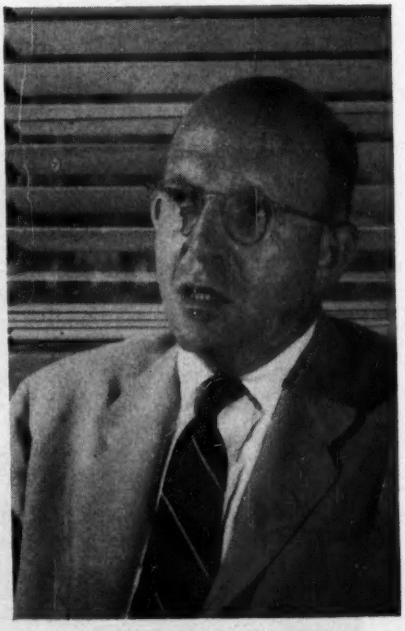
* When it realized $150 from the sale of by-product sulfuric acid.

One for the Money: As Spitz sees it, you can divide these by-products into three categories. In the first fall items like the inactive isomers of benzene hexachloride that are available in tonnage quantities but for which no big market exists. In the second are those that can be cleaned up with a minimum of processing—products like solvents that are ready for sale after a simple distillation, or filter cakes that can simply be dried and sold. The third class consists of by-products that require a "moderate amount of processing." And it's here that Spitz specializes.

His basic idea runs like this: there are a number of such chemical by-products now being produced by several companies. Very often, one company doesn't make enough to make recovery economic. But if you can gather the same type product from several companies, the idea becomes worthwhile. Spitz's job then is to work up a process for treating it, finally to interest a company (probably a small one) in the process.

"This, then," says he, "makes a tidy package for all concerned. The little fellow gets a chance to diversify. He can get his feet wet in a new field without heavy capital investment. And the big fellow gets a chance to sell a product he really had no use for in the first place."

Two for the Show: To back his reasoning up, Spitz points to two "packages" he has sold to Swope Oil and Chemical (Philadelphia). In the



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ALFRED SPITZ: A sideline in sidelines.

manufacture of plasticizers, one step involves decolorizing with carbon. The filter cake from the step is a black gunk, but it's rich in plasticizer (phthalates, for instance). Spitz developed a process for treating the cake, sold it to Morris Swope, president of Swope Oil. Swope now buys about 50,000 lbs. a month of filter cake from which he recovers about 25,000 lbs. of plasticizer. The product, says Spitz, meets all the specifications for the virgin material, is in fact usually either sold back to the original manufacturer or recovered for the latter on a contract basis.

The other package involves maleic anhydride, which is formed along with the principal product, phthalic anhydride, in the oxidation of naphthalene. Spitz figures there are over 10 million lbs./year of maleic formed in this manner. If it were of reasonably good quality there would be no problem. But it isn't.

So Spitz went to work, came up with a method of converting the maleic to fumaric. And though literature is full of references for doing just that, they are all aimed at pure maleic. Using Spitz' process, Swope is now converting low-grade maleic into fumaric that analyzes better than 99% pure.

Three To Make Ready: Both of these recovery processes fit in very nicely with Swope's business, for previously its principal products were cresylic acids recovered from the caustic wash in fluid catalytic cracking processes. Now Swope, a relatively small company (grosses $400,000-$500,000 a year), has a chance to get the feel of the markets for three chemicals at a moderate capital investment—making a profit while doing it.

For obvious reasons, Spitz is reluctant to discuss projects on which he's presently working. He does admit to a long-standing interest in blackstrap molasses, which contains several organic acids. The U.S. Dept. of Agriculture, for instance, has developed several processes for extracting aconitic acid, which makes up 3-7% of the molasses. Spitz, however, figures there's room for improvement on the processes and thinks the acid could be extracted cheaply enough so that it could compete with other unsaturated organic acids.

Spitz, who worked as a design engineer for American Cyanamid and Barrett, still considers the design of larger projects as his big goal. But he intends to continue his work on "upgrading wastes." He has, he figures, found a profitable sideline in sidelines.

PROCESSES . . . .

Standard Oil Development Co. (New York City) figured in two licensing arrangements last week.

• National Research Corp. (Cambridge, Mass.) obtained an exclusive license from Standard Oil Development to design, build and sell the latter's liquid-liquid extractor developed for Standard by the Penn State College's M. R. Fenske. Tagged the NRC Mix-and-Settle Extractor, by National Research, its main feature is the fact that the intensity of mixing is independent of the throughput rate. It's so named because, although the gross flow of the two liquid phases is countercurrent through the column, they flow together after mixing and during settling on each stage. The extractor was designed for process development work in the petroleum field, but National Research sees it playing a big role in research and commercial applications in the petrochemical, organic and fine chemical fields as well.

• In Standard Oil Development's other agreement, it authorized Ralph M. Parsons Co. to design, engineer and construct plants for the petroleum field using Standard's fluid coking process. Advantages claimed for the process: production of a low-volatility coke and excellent cracking stock with high liquid recovery.

•

Nickel Plating: Also last week came word that Smoothex, Inc. (Cleveland) has sold its bright nickel process to the Udylite Research Corp. (Detroit). The process is said to be a quick, economical, easily controlled bright nickel plating method.

EQUIPMENT . . . .

Heat Exchangers: Haveg Corp. (Marshallton, Del.) has brought out a new standard line of pressure heat exchangers made of Haveg for handling corrosive liquids and gases under heat or pressure. Outer shell, fixed and floating tube sheets, heads, baffles and impingement plates are all made of the material. The firm intends to market the new line both directly to the customer and through suppliers of heat-exchange equipment. Pressure ranges for the line are of from 50 to 75 psi. It will be suitable for temperatures, says Haveg, up to 265 F.

•

Integrator-Indicator: Fischer & Porter Co. (Hatboro, Pa.) has come up with a miniature integrator-indicator that incorporates a full-size integrating mechanism and standard 5-digit counter. Designed for use in graphic panels, the instrument indicates instantaneous rate and continuously integrates the measured variable. The integrating unit senses and totals flow every 2.5 seconds, permits varying flows to be totalized to accuracies within 1% of full scale and enables the totalizer to take full advantage of the sensitivity of flow rate meters.

•

Motor Advance: Recent developments, says U.S. Electrical Motors, have enabled it to manufacture close-coupled pump motors with horsepower ratings up to 60. The new motors are designed for use in conjunction with centrifugal pumps, are said to eliminate shaft alignment or pump mounting problems by supporting the pump on its NEMA style "C" registered mounting bracket.

•

Going Up: Those who serve the fast-moving chemical industry also must expand as evidenced by the news last week that:

• The Westinghouse Electric Corp. plant at Attica (N.Y.) will be used to house facilities for the production of electrical motors. The plant had been used for industrial stokers, but Westinghouse pulled out of that field last May, will continue to make them only until all the contracts on the books are fulfilled.

• Facilities for the production of electrical testing equipment by the Simpson Electric Co. have been doubled during the past year. A new plant, the fourth for the company, is expected in late this month.

NEW

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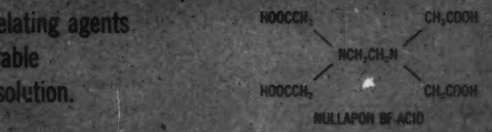
are outstanding sequestering or chelating agents capable of controlling, by deionization, undesirable di- or tri-valent metal ions in aqueous solution.



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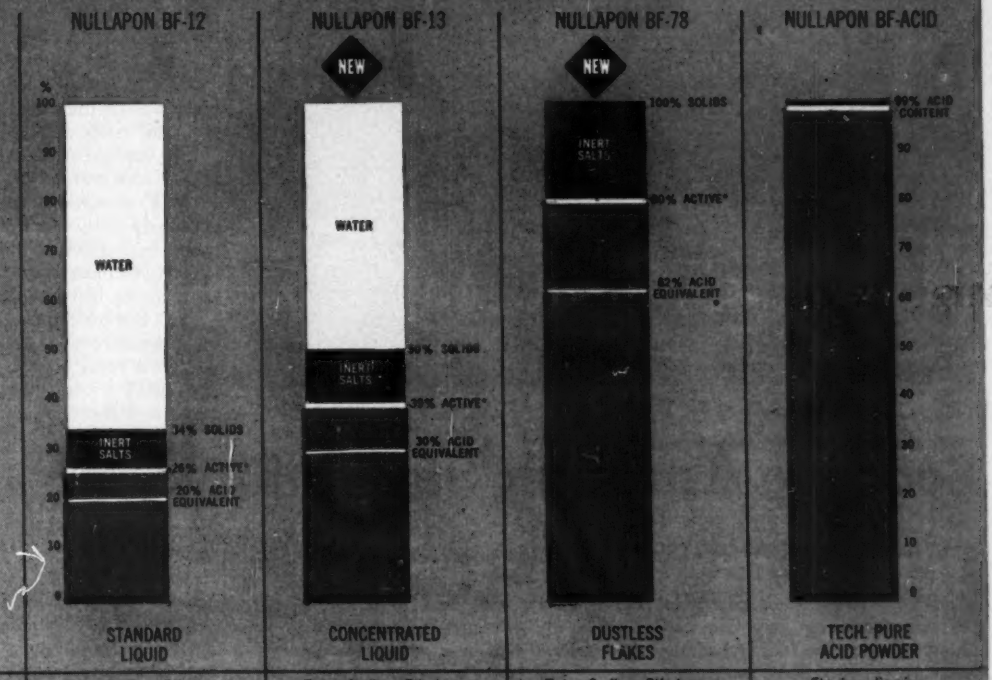

	STANDARD LIQUID	CONCENTRATED LIQUID	DUSTLESS FLAKES	TECH. PURE ACID POWDER
Active* Principal	Tetra Sodium Ethylenediamine Tetraacetate 25-27%	Tetra Sodium Ethylenediamine Tetraacetate 38-40%	Tetra Sodium Ethylenediamine Tetraacetate 78-80%	Etnylenediamine Tetraacetic acid (Tech. Pure) 99%
Physical Form Density	Clear Liquid 1.2 (10#/gal)	Clear Liquid 1.3 (11#/gal)	Non-hygroscopic Flake .6 (5#/gal)	Powder .7 (6#/gal)
Molecular Weight of Active Ing.	380	380	380	292
100 Parts of Nullapon Controls	6.7 parts $CaCO_3$	10.0 parts $CaCO_3$	20.0 parts $CaCO_3$	33.5 parts $CaCO_3$ when used in alkaline solutions
or . . . 1 oz. by weight in ten gallons of water controls	49. PPM $CaCO_3$	73 PPM $CaCO_3$	146 PPM $CaCO_3$	245 PPM $CaCO_3$ when used in alkaline solutions
STANDARD PACKING	500 lb. Drum 50 lb. Drum 10. lb. Drum	500 lb. Drum 50 lb. Drum 10 lb. Drum	200 lb. Drum 25 lb. Drum 5 lb. Drum	250 lb. Drum 25 lb. Drum 5 lb. Drum

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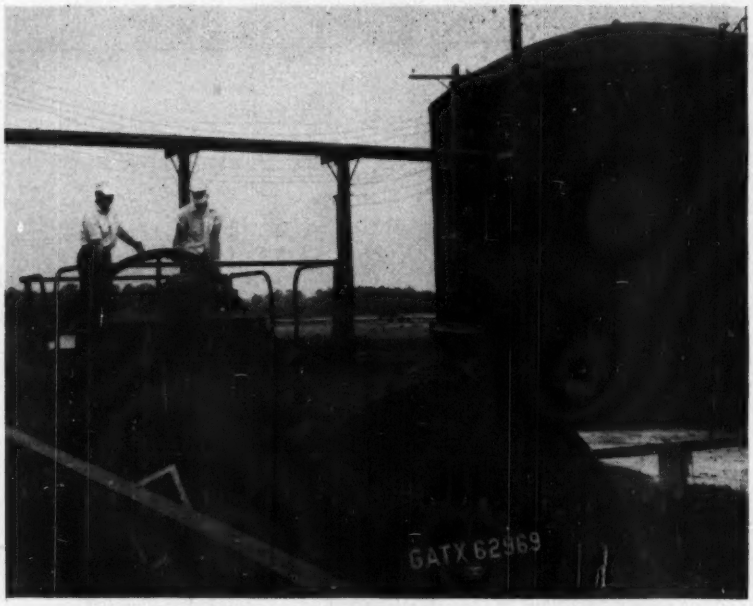

TANK-CAR CAUSTIC: The 73% grade has a competitive bonus.

Leading Through Strength

This is the time of year when ad agency copy writers by the score plaintively 'phone their clients to ask, "What's something new we can say about caustic this fall?" And usually the same clients' sales managers are asking themselves the same question—while struggling with sales strategy plans pointed toward the contract-writing month of December. But this year there is an unparalleled uniformity among caustic producers: their answers to the "what's new" question all seem to revolve around the advantages of 73%* caustic solution over the commoner 50% variety.

There is, of course, nothing really new about the high-strength caustic's transportation-cost attributes. For at least 15 years, these have been carefully explained to larger and more distant customers. But as the industry's sales managers get set to pull their sales forces out of summer's selling doldrums, there are these two cogent reasons for the present new interest in "73":

• The contract year of 1954 will probably be the most competitive in over a decade. Even before the current forced-draft building of chlorine-caustic capacity—to fill chlorine needs—the long-range outlook for caustic was not altogether bright. New installations about to go on-stream will only aggravate the strain.

• Freight rates have been steadily increasing, changing the complex calculations needed in making a choice between the 50% and 73% grades—usually to the advantage of the latter. Many a 50% customer has now been converted to a potential 73%'er.

The confluence of these two influences explains the present activity. Salesmen are using the concentrated grade as their excuse for new assaults on competitors' customers. And to prevent these maneuvers from being successful, sales managers are defensively scanning their own contract lists to make sure that all borderline accounts have been recently reviewed.

Complexity: To the uninitiate, it would seem that there's no question as to which of the two grades is more economical to ship and handle. After all, a 50% solution contains nearly twice as much water as the 73% material. Besides, practically nobody uses either grade "as received"—they are both customarily diluted well below 50%. To continue buying 50% would seem like an expensive way to ship great quantities of water around the country.

But the problem is not that simple—neither for the customer nor for the producer. Both grades are priced on a 76% Na_2O basis (app. 98% NaOH), but the $2.55/cwt. for 50% and $2.65/cwt. for 73% involves a 10¢/cwt. differential that eats up any small freight savings.† Indeed, customers lying within a 20¢/cwt. freight rate perimeter around a caustic producer would find it difficult to justify the switch.

And even when the freight savings are moderately large, the customer must cross the hurdle of justifying the capital costs entailed when installing 73% storage and handling equipment. The concentrated caustic freezes at 144 F—compared with 54 F for 50%. Consequently the 73% must be shipped and stored at high temperatures. The customer normally dilutes the caustic as it is received from the tank cars, but straight dilution raises the temperature to a tank-destroying 250 F. As a result, it's standard procedure to install a cooler between the intake line and the storage tanks.

Another complication arises when the customer's storage capacity is geared to receive single tank cars; a diluted tank car of 73% caustic takes up much more volume than a directly transferred car of 50%. And if the consumer's process demands an iron-free caustic, all of these equipment changes can become extremely expensive. Minimum switch-over costs seem to be about $3,000, but they can easily climb to $15-20,000.

To make his decision, a consumer must calculate the potential freight savings, subtract the price differential for the higher-strength grade, and then figure how many months or years it will take for this net saving to pay off the cost of conversion. Because a board-of-directors decision is normally required on the capital expenses, this is a long, slow process.

Absorbed Savings: The complexities that face the consumer are also reflected in the producers' attitude toward the 73% grade. All but three of the 12 major makers now offer both strengths, but all agree that the 10¢/cwt. differential is insufficient to cover the additional evaporation steps needed to produce the higher-strength material.

Yet their interest in 73% is certainly not based on altruism nor on a need to provide a competitive "service." Rather, it is derived from a

* As used here, the "73%" designation includes the 70% and 74% grades sold by some of the producers. All of these percentage points cluster in the hollow of a fortuitous dip in caustic's solubility curve—and they are sold competitively on a caustic-content basis.

† The differentials between solutions and solid forms are many times greater; consequently the solids are generally bought only by technological necessity. This summer's solid-caustic price hikes (the solutions—which move in vastly greater quantities—remain unchanged) made the differentials even greater.

realistic appraisal of the fact that the caustic industry pays a great deal of the freight on the f.o.b. shipments it makes to its consumers. "Freight equalized with nearest competitive producing point" is a standard phrase in most caustic sales contracts. And 73%'s freight savings can make a potent difference in the narrow-profit caustic business.

Some companies, for instance, are now able to ship into the Chicago district without having to absorb a penny of the freight. But the instant that Hooker's new plant at Montague, Mich., comes into production, these same producers will have to refund all of the freight over and above the Montague-Chicago rate. They aren't nearly so afraid of Hooker's direct competition as they are of the resultant raid on their net profits. A heavy percentage of 73% customers in Chicago would keep that new freight absorption to a minimum.

The same sort of thinking is likely to be at the root of Dow's decision to build a sea-going tanker that can handle 73%. At present, the *Marine Chemist* is bringing 50% material from Texas to New Jersey—where it is sold in tank cars on the basis of freight equalized with Maryland. Since Dow is paying most of the total tariff, it is to its advantage to initiate ocean-borne 73% movement.

There is one special complication in Dow's plan, however, and it illustrates how complex the 50%-vs-73% question can become: the northern terminus of Dow's caustic voyage will be in the prime New York-Philadelphia market—and that happens to be one of the few nonproducing areas where it is virtually impossible to make 73% economically attractive. This anomaly arises from the existence of Diamond's small caustic plant at Edgewood, Md. As the closest producing point (size makes no difference), it is automatically the freight-equalization base for all 50% shipments into the metropolitan East. But since Edgewood doesn't produce 73% caustic, that grade is freight equalized with Solvay's more distant Syracuse, N.Y., plant. Customers around New York and Philadelphia are therefore swung toward 50% by both the price differential and an impossible-to-beat freight advantage.

But despite this special situation, the future of the 73% grade seems secure. All producers indicate that high-strength's percentage of total caustic sales is steadily increasing (estimates from individual companies on today's proportion vary from 10% to 40%, but an industry range of 25-30% appears to be reasonable). And as freight rates keep increasing, so will the weight of the advantages that both producer and consumer can derive from its use.

Fiber Fundamentals

SPREADING synthetic textile knowledge is a pressing problem in Europe, too. One approach is this use of simplified molecule models—on display at a "Higher Standard of Living" exhibition in Dusseldorf, Germany. Attendant explains "science" of fibers.

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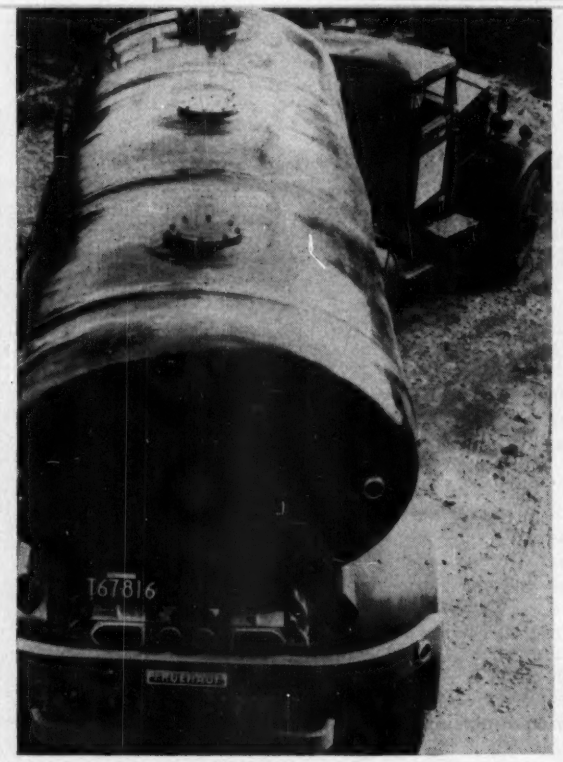

SIZE: New chemical tanker will carry up to 3,400 gal. of formaldehyde . . .

Plastic Tanks Grow Up

On the road this week is a new chemical tank-trailer—molded from glass fibers and a Cyanamid polyester resin. It is billed not only as the largest truck tank "of its kind"—but also as one of the largest one-piece molded structures ever made.

Formed over a wooden mold by the Carl N. Beetle Plastics Corp., the 3,400-gal. container is a grown-up version of similar tanks made by the firm for Arabian American Oil Co. The experience thereby gained came in handy in meeting the problems encountered with the big new tank—21-ft. 9-in. long, 6-ft. 2-in. wide, 4-ft. 4-in. high.

Owner and operator of the new trailer is P. B. Mutrie Motor Transportation, Inc., Waltham, Mass., which will use it to haul formaldehyde and other liquid chemicals. Acetic acid, alcohols and liquid alum are among the other most likely candidates.

Enthusiastic over his company's experiment, Mutrie's vice-president and general traffic manager John Roberts lists these advantages for the plastic tank:

• Less than half as heavy as the steel tank it replaces, the plastic container will allow a 3,600-lb. increase in payload—still stay within the state's

. . . in a plastic shell made of polyester resins and glass fibers.

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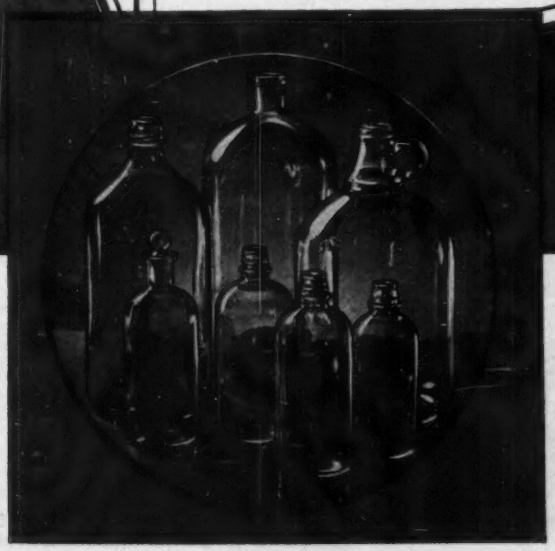
4. Highly resistant to chemical attack. No pores or pits to absorb water or chemicals.
5. Bottle held firmly by cork blocks. All corners of box securely cushioned.
6. Light in weight. Low return costs.
7. Box is clear, sturdy, seasoned white pine. Bottle easy to install; convenient to handle and store.
8. Approved by Bureau of Explosives. MCA Standard 13-gallon carboy bottles.

Immediate delivery on all types from 1 lb. bottles to 13-gallon carboys. Illustrated brochure mailed on request.



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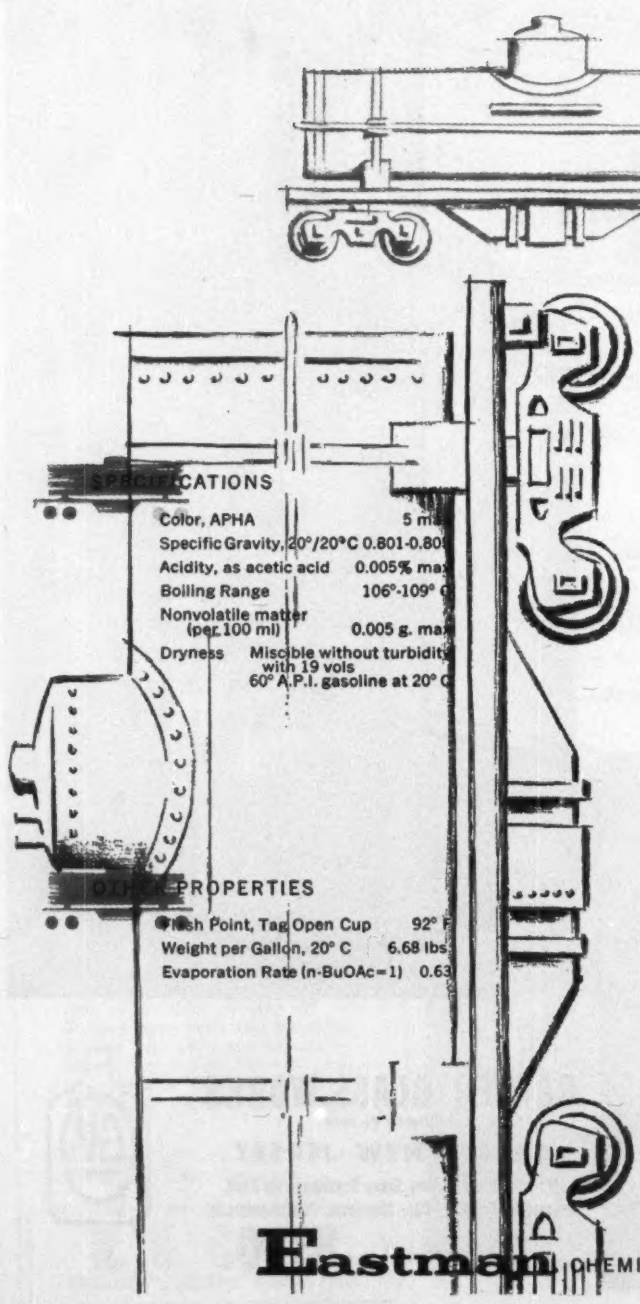

Of particular interest to lacquer formulators, butylated resins manufacturers and other users of butyl alcohol, Eastman's isobutyl alcohol offers the possibilities of worthwhile savings. Synthetically produced from petroleum raw materials, the supply, purity and uniformity of Eastman isobutyl alcohol is assured.

If you are now using or contemplate using butyl alcohol as a solvent or as an intermediate, investigate Eastman isobutyl alcohol. We will be pleased to send samples and to cooperate with you in adapting your process or solvent system to take advantage of this Eastman product.

SPECIFICATIONS

Color, APHA	5 max
Specific Gravity, 20°/20°C	0.801-0.805
Acidity, as acetic acid	0.005% max
Boiling Range	106°-109° C
Nonvolatile matter (per 100 ml)	0.005 g. max
Dryness	Miscible without turbidity with 19 vols 60° A.P.I. gasoline at 20° C

OTHER PROPERTIES

Flash Point, Tag Open Cup	92° F
Weight per Gallon, 20° C	6.68 lbs
Evaporation Rate (n-BuOAc=1)	0.63

SALES OFFICES: EASTMAN CHEMICAL PRODUCTS, INC., Kingsport, Tenn.; New York—260 Madison Ave.; Framingham, Mass.—65 Concord St.; Cleveland—Terminal Tower Bldg.; Chicago—360 N. Michigan Ave.; St. Louis—Continental Building; Houston—412 Main St.; WEST COAST: WILSON MEYER CO., San Francisco—333 Montgomery St.; Los Angeles—4800 District Blvd.; Portland—520 S. W. Sixth Ave.; Seattle—821 Second Ave.

Eastman CHEMICAL PRODUCTS, INC., KINGSPORT, TENNESSEE
SUBSIDIARY OF EASTMAN KODAK COMPANY

DISTRIBUTION . . . .

50,000-lb. over-the-road limit. Calculated on a two-a-week schedule between Springfield, Mass., and Montreal, Can., this benefit will mean nearly a $3,500 annual increase in revenue for the trucking company.

• According to Roberts, an initial saving of $1,000 is also possible because the plastic tank needs no special lining. Looking ahead, he predicts that mass-produced tanks could cost only one-third as much as their stainless steel counterparts.

• Any leaks that might develop in the plastic model can be easily patched with resin and glass—at an infinitesimal cost.

• In tests over rough New England roads—while loaded with 14 tons of water—the new tank demonstrated a 24-to-1 safety factor.

The trailer chassis for the experimental model was especially designed and built by Fruehauf Trailer Co. Unable to resist the trend, Fruehauf's engineers made even the hose and pump compartments—and the fenders—out of the same plastic-glass combination used for the tank itself.

•

New Outlets: Owens-Corning Fiberglas Corp. has established a branch office in Memphis.

• An office and warehouse building is being erected in Philadelphia for Parke, Davis & Co.

• Phillips and Jacobs (Philadelphia) is planning a new warehouse to be constructed in Delaware Township, N.J.

•

New Agent: The Neville Co. has designated Harry C. Smith Co., Inc., as its representative in western Tennessee and Arkansas.

•

Protection: An insulated box car designed to protect wet wood pulp from freezing while in transit during winter has been developed by the Chicago and North Western Railway.

•

Novel Course: Columbia University's School of Engineering will offer a course on package engineering this fall. Lecturers will be 16 well-known packaging authorities.

•

Purchasing Guide: The purchasing department of the Standard Oil Co. (Indiana) has used its move to refurbished offices in Chicago as occasion for publishing a colorful guide for visiting salesmen. Included is an organization chart of purchasing personnel, plus a brief summary of the company's buying philosophy. The new offices are on the ground floor at 910 S. Michigan Ave.

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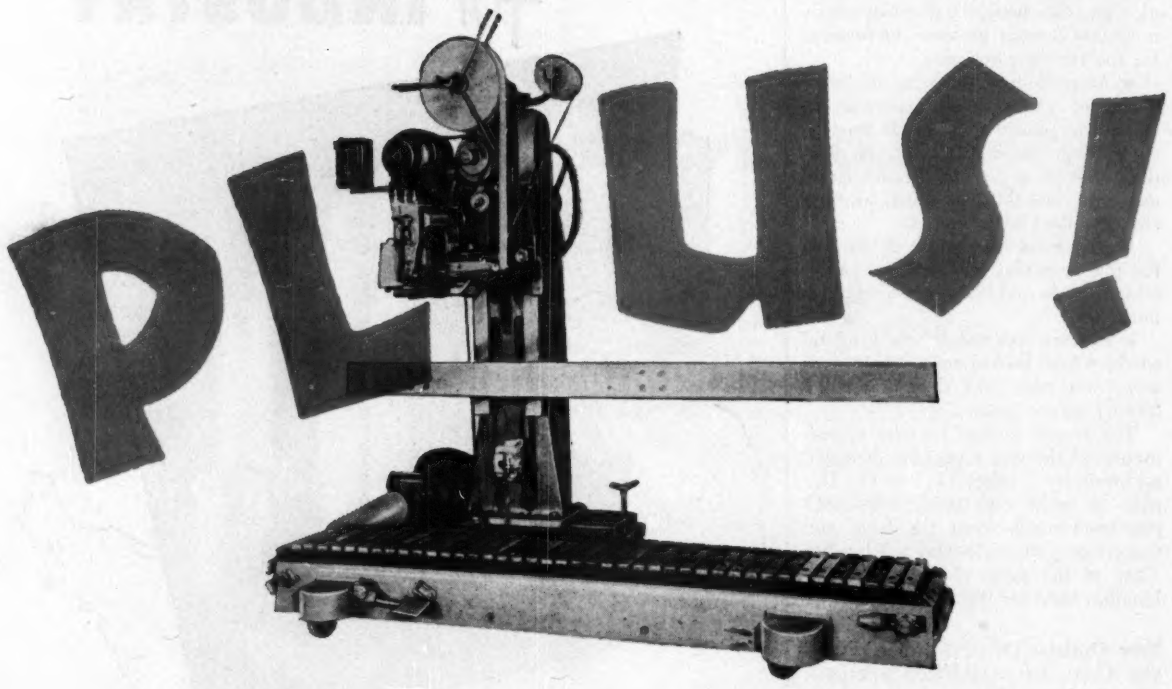

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You can count on the model ET BAGPAKER to give you faster packaging and better product protection...at lower cost.

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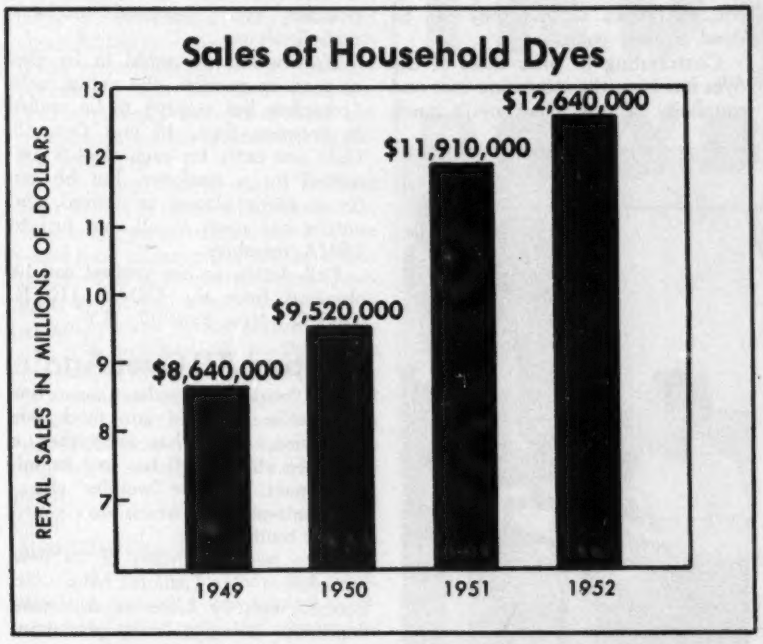


BOOM OR BUST, household dye sales should continue to mount.*

Capitalizing on Color

Household dyes, though only a fraction of the giant fabric coloring industry, chalk up retail sales over $12 million a year.

Finding new uses for the dyes has been the secret behind their expanding market.

And though sales are climbing during these boom times, makers figure they would actually do better in a slump.

While other specialties makers enjoy today's boom and prefer not to think about a recession, makers of household dyes are convinced that an economic slump might do them good.

Nevertheless, they're not scorning the steadily rising sales that have come with these times (*see chart*). According to *Drug Topics'* just-released annual survey of such products, their sales topped $12 million last year. A slump, as the dye makers see it, would mean more care would be taken of clothing, more dyeing would be done in the home.

Part of the reason for the steadily rising market for household dyes has been their ever-broadening applications. Currently getting some adroit promotion is the staining of unfinished furniture—tied in cleverly with the interest in do-it-yourself activities; and it suggests some unusual ideas in home decoration: using the dyes, furniture can be stained nearly any color of the rainbow.

Sky-Blue Poodles: Furniture staining is far from the only unusual application, however. Among the more intriguing ways customers use home dyes: on flowers—artificial and real, eyeglass frames, fish lures, picture frames, buttons, zippers, live dogs and cats, macaroni for baby beads, casts for broken legs, watermelon seeds for jewelry, and fish-bowl water.

The list is far from complete, but it does serve to bring out one point—that over 50% of the use for household dyes is not for clothing or other fabrics. The additional applications help level out sales, which are lightest in the spring.

Fiber Problem: Despite the variety of ways householders have found to use the dyes, their prime purpose has been to color fabrics; and introduction of new synthetics has provided them with plenty of problems.

Back in the '20s, when dyes were first taking hold, silk, cotton, rayon and wool were about all that were dealt with. But since then, introduction of acetate and nylon has complicated matters. Most of the leading products are now advertised as "all-purpose" or "all-fabric" dyes. But that doesn't mean they'll color metallic or glass fibers, or, judging from the instructions, synthetics like Acrilan, Dacron and Orlon.

The way the mixed-fiber dyeing problems have been met is to produce a blended product—one that contains a dye effective on each fiber. In a few cases, the distributing company makes or blends its own, but for the most part—because it is cheaper—prepared dye formulations are bought from basic dyestuffs suppliers like Calco or General Dyestuff.

As it's packaged, a typical all-fabric dye consists of a direct dye for cotton, an aniline dye for silk, an acid dye for wool, and perhaps a chrome dye for nylon. Most household dyes contain only about 5-15% active coloring material, but that's enough for the small amount of fabric involved.

Although all-fabric dyes are the biggest selling items now, not all of the others have been crowded off the shelves—and there is no reason why a housewife should purchase three inactive dyes for her dyeing job if she knows just what fiber she has.

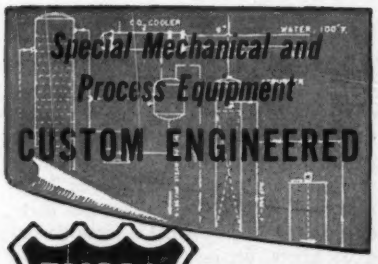
Market for Color: The big retail market for dyes is principally the bailiwick of two firms—Park and Tilford, which distributes Tintex as part of the diversification it assumed in the prohibition years, and Rit Products Corp., a division of Best Foods. These two organizations share an estimated 80% of the market.

A number of other companies are selling products in limited areas, and for some fairly restricted applications, such as rug coloring and the like. This would include Diamond Chemical Co., San Francisco (Thur-O-Color); Bonneau Dye Co., Cleveland (Bonneau Dyes); North American Dye Corp., Mount Vernon, N.Y. (Sunset and Dyetint); and O. P. Rubardt & Co. (Angel Dainty and Produra).

Top Tints: Surprisingly enough, according to sales records of one of the industry leaders, dark colors—black, navy, brown—aren't the biggest sellers. Variations of reds, greens, and blues comprise almost 75% of the business. (Against any one of these hues, however, black holds its own.) Yellows and browns bring up the rear.

Another major item, though sales figures aren't available, is the color

* Figures from *Drug Trade News.*



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stripper. It's essential in preparing colored fabrics so that they can be dyed a new color.

Contributing to brisk sales of the dyes has been the increasing ease and simplicity of use. They aren't much trouble to use nowadays, and though results are not what would be expected of a mill-dyed textile, they seem to pull in plenty of repeat sales. Professional dyeing is generally rather costly, and is seldom guaranteed—all of which tempts the householder to try his own skill.

STAINING FURNITURE: Dyewood has an additional meaning now.

Sales records indicate that at least one in every two U.S. families tries the home dyes, and that one in three uses them more than once. In addition to the U.S. market, household dyes have major sales overseas.

With sales mounting steadily—though there is seldom any sustained, heavy advertising—and, applications growing, it looks as if the dye makers have latched on to an exceptionally stable field.

Packaging Party

Part of the upcoming December meeting of the Chemical Specialties Manufacturers Assn. will be the second running of the aerosol packaging contest. The CSMA is calling for entries now.

Seven classes will be judged—insecticides; moth products; room deodorants; lacquers, paints, enamels, etc.; other household products (waxes, polishes, etc.); personal products; miscellaneous.

Entries are requested to be filed as soon as possible—the actual units (complete but empty) to be mailed in between Sept. 15 and Oct. 15. Only one entry for each class is permitted for a marketer, but he can try as many classes as desired, and entries are open to all, not just to CSMA members.

Full details on the contest can be obtained from the CSMA, 110 E. 42nd St., New York 17, N.Y.

Starting All Over Again

A new "miracle" ingredient seems due to breathe new life into toothpaste promotion, which has languished a bit since chlorophyll has lost its initial impact. The new "wonder" chemicals: anti-enzymes, which are claimed to halt tooth decay.

First to begin ballyhoo of its new formulation is Lambert Co. (St. Louis), with its Listerine Antizyme dentifrice. It began heavy promotion last week, was aided in its campaign by consumer articles in the *Saturday Evening Post, The American Weekly,* and *Better Homes and Gardens.*

But it will be far from alone with the new dentifrices: Colgate, long top-dog in the $100-120 million toothpaste business, has quietly strategized to begin nationwide introduction of its new paste, and Block Drug Co. (Jersey City, N.J.) seems likely to add the enzyme inhibitors to its well-known ammoniated-chlorophyll toothpaste.

Anti-acid Plaque: A short outline of the theory of tooth decay explains the role of the new ingredient: mouth bacteria produce enzymes that convert sugars and starches into acids—which in turn cause dental caries. The problem has been to find some long-lasting substance to inhibit enzyme production. According to studies pushed by Northwestern University, two chemicals are effective, and because they appear to remain on the plaque, or surface coating of the teeth, they are potent for several hours. These compounds are sodium N-lauroyl sarcosinate and sodium dehydroacetate.

Present formulation make use of about 1.5% of the anti-enzymes. Colgate, which claims that more than two years' study backs its product, makes its own sarcosinate; Listerine and other companies using the dehydroacetate will likely buy it from Dow or National Aniline. (Listerine's formulation also includes sodium lauryl sulfo-acetate and sodium oxalate.)

Although the anti-enzymes are fairly expensive—the dehydroacetate about $3.00/lb.—makers of the dentifrices apparently won't be charging premium prices for their products. And apparently incorporation of the compounds has not created any flavoring problems.

In a sense, this is one of the first applications of chemical anti-enzymes. Heat is the most common anti-enzyme—and food canning is a typical application. The chemical products, however, might find eventual application in "cold-packed" foods, although there are still problems of toxicity to be dealt with. At any rate, anti-enzyme producers are taking a strong interest in the new toothpastes—and are waiting to see how the consumer takes to this latest twist in dentifrice formulation.

Cosmetic Mist

Marketed for the first time last week, in Chicago, was a new aerosol product: Helene Curtis' Industries Deodorant Mist. It seems to be sparking interest in several areas of the cosmetic industry.

Aerosol deodorants aren't brand-new by any means, but it appears that Helene Curtis has licked the formulation problems that formerly meant corroded cans and plugged valves. The test-marketing, introductory pack of the new product is in standard Continental cans with standard, all-nylon Precision valves.

But about the formulation, Helene Curtis is saying little. In its ads, however, it's stressing that there are no "irritating aluminum salts," although there is some perspiration inhibitor. Also included is an unspecified bacteriostat, and a little alcohol to give a pleasant tingle.

Fussless, Mussless: Big point in the promotion is the convenience of the aerosol pack. It gives a squirt-free mist that is said to dry immediately, to be harmless to all fabrics and that can be easily controlled.

The deodorant is packed in a 6-oz. can that contains 3.5 oz. of the formulation. The liquid, supplied by Helene Curtis, is being packed by Geo. Barr & Co. (Chicago). The unit sells for $1.25, plus federal tax.

Patents have been applied for, but Curtis Industries isn't waiting until they're granted to plan national distribution. It thinks it is a full stride ahead of the rest of the field and intends to stay there.

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Houdini Touch: Magic Manufacturing Co., Charleston, W. Va., has been

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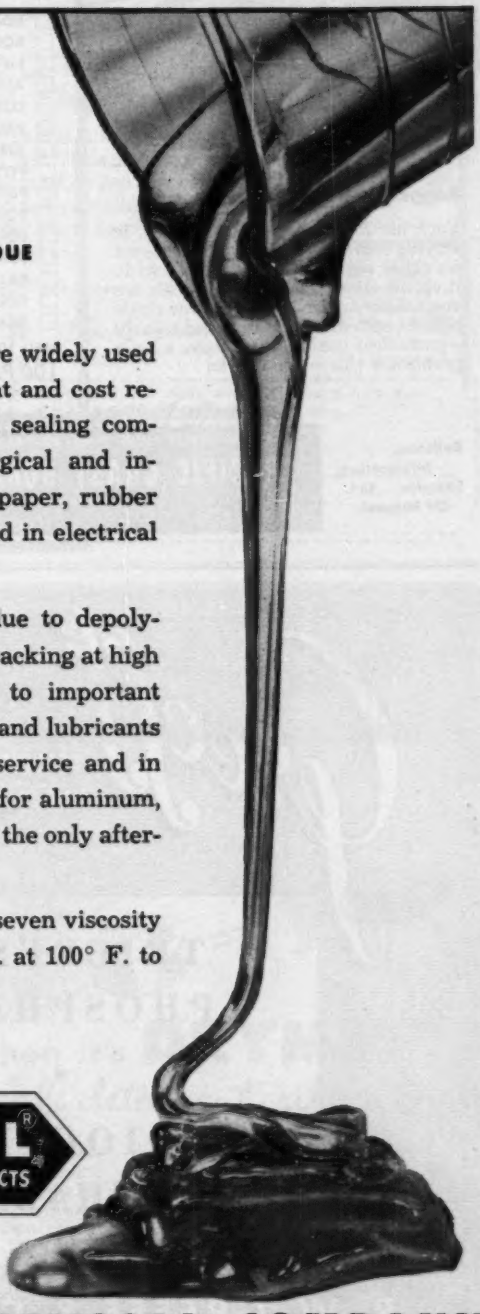

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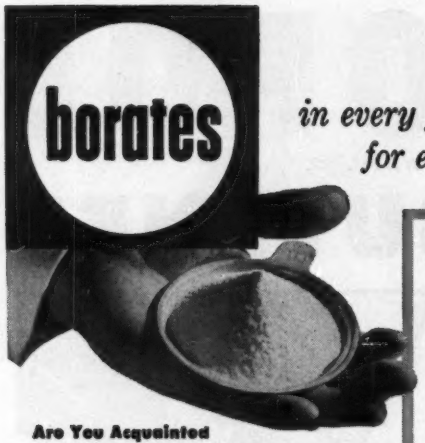

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SPECIALTIES . . . .

purchased by Sterling Drug Co. John Puhl Products Co. (Chicago), another Sterling division, will operate the concern, which makes washing solutions.

•

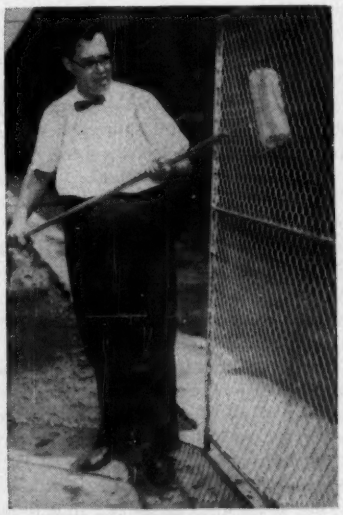
Adhesive Aggregate: Cycleweld Cement Products Div., Chrysler Corp. (Los Angeles), has just opened a new adhesives plant for production of high-strength structural adhesives and pressure-sensitive adhesives.

• Anchor Adhesives Corp. (Flushing, N.Y.) has developed a new foam rubber cement, Softseam, said to provide permanent bonds with seams that remain soft and unstiffened.

• National Starch Products, Inc., (Plainfield, N.J.) has just received a government contract for the development of an improved adhesive for packaging of Quartermaster items for overseas shipment.

•

Zinc In: ZRC (zinc-rich coating) is the new protective coating being beamed at iron and steel users by The Sealube Co. (Wakefield, Mass.). The new protective coating, says Sealube, provides greater corrosion resistance than previous coatings because it



Rolling on Paint

ROLLER PAINTING, which caught on first in the kitchen, is growing into bigger jobs. For industrial use—painting heavy wire fences, boats, household exteriors—Essex Graham Corp. (Chicago) is now making this roller 9 in. long, 4 in. in diameter, and equipping it with a long handle. The deep-pile, ⅞ in. Dynel fiber holds plenty of paint.

SPECIALTIES . . . . .

forms a tougher film with better adhesion. It is a resin rich in zinc and containing an antisettling agent, can be thinned with regular paint thinners and possesses increased electrical conductivity.

•

Discrimination? Schwegmann Brothers Giant Super Markets have bounced up with another move in the "fair-trade" fight. The firm has filed action to have set aside the injunctions recently granted in favor of some 10 manufacturers.

Schwegmann claims that the manufacturers have enforced the fair-trade policy against the Schwegmann stores, but not against competitors; that this puts Schwegmann at a disadvantage, and that therefore the injunctions are instruments of wrong.

That action has been taken against Johnson and Johnson, Lever Brothers, Colgate - Palmolive - Peet, Personal Products, Mennen, Sterling Drug, Bristol-Myers, Miles Laboratories, and Mead Johnson.

•

Surface Stamina: Flash-Stone Co., Inc., (Philadelphia) is now marketing a new mastic flooring said to meet the demands of modern industrial traffic and moderate exposure to corrosive oils and greases. Tagged Liggite, the flooring, says Flash-Stone, is easily installed, does away with drag and reduces vibration noises.

•

Over the Waves: Wyeth Laboratories (Philadelphia) is now ready with its answer to motion sickness. It's an antihistamine tradenamed Phenergan Hydrochloride. While retaining its effectiveness against hay fever, the drug is said to ease *mal de motion* with minimum side effects such as drowsiness.

•

Dry-Cleaning Bill: Gov. Earl Warren (California) has just signed into law a bill authorizing the state fire marshal to spend $25,000 in research on fire and health hazards caused by the use of dry cleaning solvents and processes.

•

All A-M: American-Marietta Co. has acquired the remaining interest in Adhesive Products, Portland, Ore., from the United States Plywood Corp., with whom A-M had shared ownership since March of this year.

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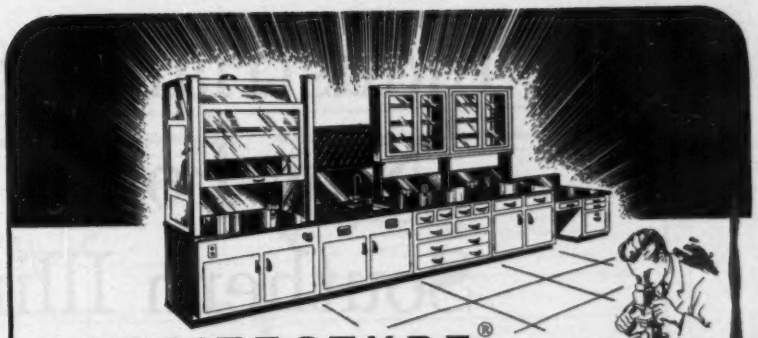
Growing Up: A two- and three-story extension is being added to the Newark, N.J., production facilities of Beckwith Chandler Div., Devoe Raynolds Co. Resin, filter and tank buildings are being expanded.



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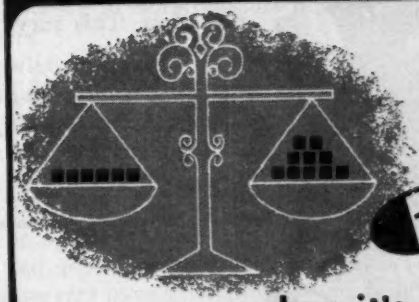

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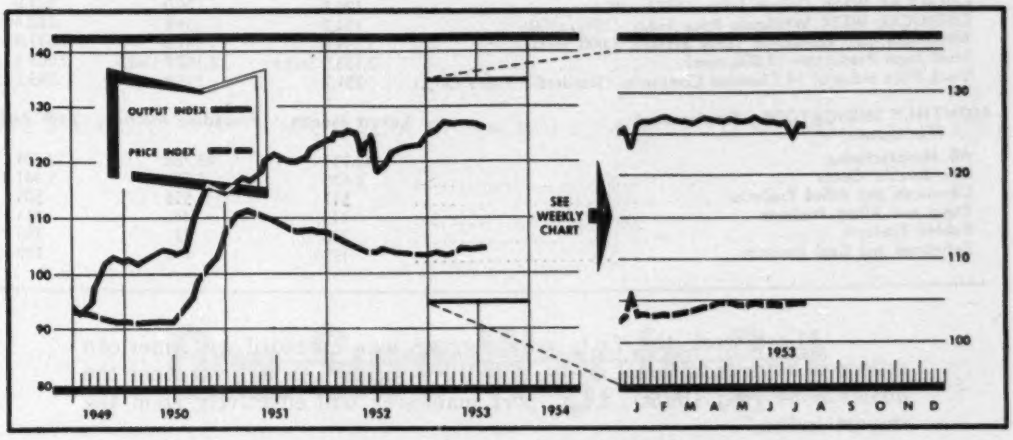

CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries
CW Price Index—Basis: Weekly Prices of Sixteen Selected Chemicals

MARKET LETTER

With most workers back from summer vacations, chemical plants are, by this week, resuming a humming second-quarter-like activity. Consumers, taking another look at not-too-high raw materials (in some cases purchased hesitantly in the face of third-quarter slump fears), are more confidently stepping back into the market. Reason: flip-flop from pessimistic to optimistic outlook for the balance of the year.

And, confident that the majority of earlier price increases will stick, producers, too, are going ahead with normal fall production plans.

•

Phenol buying interest, for example, is more piqued now than it has been in the past few months. Both natural and synthetic sellers attribute the business pick-up to more reassured, back from summer shutdown, phenol consumers.

Though domestic producers assert they will hold existing schedules, there is some price ruffling in the export market. A few sellers are reportedly meeting lower foreign phenol tags in that field.

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Naphthalene producers abroad are probing the reasons behind the turtle-like movement of their material in this country. At least one importer here is digging up the answers, in addition to weighing the advisability of handling some good imported chipped naphthalene.

Most trade observers have little difficulty pointing out the slowing naphthalene factors. One big one: the large volume of low-priced material hitting these shores earlier this year.

Another reason for the ailing market is the absence of American Cyanamid's naphthalene take for its phthalic anhydride needs. Add to this: expanded domestic production facilities plus other easing naphthalene consuming outlets and you get a far from bright naphthalene market picture.

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U.S. ammonium sulfate makers, too, are being bothered by foreign competition headaches. One analgesic was the recent re-establishing of port price quotations—to match import tags—at some Atlantic and Gulf points (CW, Market Letter, Aug. 1).

MARKET LETTER

WEEKLY BUSINESS INDICATORS	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947=100)	126.1	126.0	121.8
CHEMICAL WEEK Wholesale Price Index (1947=100)	104.7	104.8	102.4
Bituminous Coal Production (daily average, 1,000 tons)	1,594.0	1,561.0	1,631.0
Steel Ingot Production (1,000 tons)	2,138.0 (est.)	2,162.0 (act.)	2,069.0
Stock Price Index of 14 Chemical Companies (Standard & Poor's Corp.)	251.7	255.9	245.2

MONTHLY INDICATORS—Employment (Thousands)	Latest Month	Preceding Month	Year Ago
All Manufacturing	13,731	13,788	12,229
Non-durable Goods	5,626	5,589	5,481
Chemicals and Allied Products	511	513	501
Paper and Allied Products	443	446	411
Rubber Products	218	221	195
Petroleum and Coal Products	193	190	177

Last week the f.o.b. port-pegging was extended by American sellers to cover additional areas. It's still a question though, whether the domestic $47/ton (bulk), f.o.b., port maneuver will effectively stem the import influx.

But foreign competition is only one whipper of fertilizer makers' spirits. Losses of overseas markets for U. S. material continues to add some bruises (CW, Apr. 4).

Latest is news that Brazil is sinking some $4.4 million (U. S. equivalent) in a new nitrogen fertilizer plant now a-building. In addition to easing Brazil's own growing fertilizer demands, the Sao Paulo state installation will also produce ammonia, nitric acid and ammonium nitrate.

•

More outside-U.S.A. chemical activity—this time to the north—will have Canadian formaldehyde and pentaerythritol customers buying in their own backyard. St. Maurice Chemicals Ltd. (joint Heyden-Shawinigan Chemicals venture), this week is turning out tonnage quantities.

The new plant (Varennes, Quebec) has capacity for 30 million lbs. of formaldehyde and 3 million of pentaerythritol, which is expected to meet the needs of Canada's fast-ballooning paint and plastic industries.

•

Closer to home, word that the Petroleum Administration for Defense is contemplating scrapping its PAD Order 4—which fixes a minimum on the amount of tetraethyl lead to be used in civilian domestic avgas—is not causing too great a stir among producers.

Repeal, if it comes, will simply cut down needless Washington "paper" restriction, will not mean more alkylates for civilian aviation gasoline. Reason: The military will continue to siphon the bulk of alkylates for its avgas program, leave civilian-gas makers little choice but to stick with TML. Uncomplicating, too, is the fact that there is no urgency in the nonmilitary plane fuel supply-demand situation at the moment.

•

No surprise to the industry is the government's proposed shutdown of its GR-S plant at Institute (W. Va.), the middle of next month. Reason is tied in with the fall-off in new rubber demand from tire makers plus high enough RFC synthetic stocks.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week ending August 24, 1953

	Change	New Price		Change	New Price
UP					
Copper metal, electrolytic, dlvd.	$ .005	$ .29	Di-isobutylene, drms, c.l. wks.	$ .005	$ .0975
DOWN					
Benzene hexachloride, dust, dry c.l., dlvd., gamma unit-lb.	$ .0047	$ .013			

All prices per pound unless quantity is stated.

A MESSAGE TO AMERICAN INDUSTRY • ONE OF A SERIES

One Sure Way to Get MORE DEFENSE FOR LESS MONEY

How can we get more national defense for less money? The best answer yet given to this question appears in a little-noticed section of the new defense budget. That answer, with which this editorial is concerned, is to provide more equipment with which to step up munitions production in an emergency. Thus we can eliminate much of the need to stockpile finished munitions in advance.

The new defense budget provides an appropriation of $500 million, to be invested by the Secretary of Defense in specialized facilities required to produce munitions on a wartime scale, but not adapted to profitable operation by private industry in normal times. Facilities of this type are known as "stand-by capacity."

There is no strictly political controversy over the "stand-by capacity" program. It was originally suggested by Clay Bedford, Special Assistant to the Secretary of Defense during the Truman administration. It has since been reviewed and endorsed by the Eisenhower administration. Moreover, it involves little or no technical controversy. Civilian and military experts are well agreed that the only alternative to enormous expenditures for stockpiling military equipment is to provide enough facilities for producing it quickly in an emergency.

Here is the Key Idea

In his speech of May 19, introducing his defense budget to Congress and the nation, President Eisenhower stressed the value of such reserve capacity in these terms, ***"The more swiftly and smoothly we can mobilize, the less our dependence upon costly standing armies and navies."***

In accord with this idea, the $500 million requested for the present reserve capacity program would be invested in tools that require a long time to produce, and so present grave complications in an emergency unless they are ready in advance. Some such tools would be installed in new plants that are needed to eliminate potential bottlenecks in the defense production program. Others would be ordered to replace that part of the government's present machine-tool inventory which is made obsolete by changes in the design of defense products. By completely "tooling up" with the most modern equipment, the admin-

istration hopes to realize a production potential many times greater than could be achieved by spending the same amount of money on military end-products.

Examples of Savings

In the specialized field of defense production, adequate modern capacity is the key to both economy and speedy delivery in a pinch. Here are some striking examples from the recent report of the Advisory Committee on Production Equipment (Vance Committee) to the Director of Defense Mobilization:*

—In the case of certain ammunition components, the cost of new capacity can be recovered in only six weeks of full production.

—If $500 million worth of special tools needed to make aircraft are purchased in advance, aircraft production during the first two years of war will be increased about $18 billion. In other words, it costs 1/36 as much to acquire the tools in advance as to acquire the aircraft.

—In the case of a certain ordnance item, an expenditure equal to the cost of only 150 units of the item will provide the capacity to produce thousands and save three years' time in meeting mobilization requirements.

Moreover, reserve plants and equipment can be kept up-to-date at only a small fraction of the cost required to maintain an up-to-date reserve of military end-products. The cost of replacing 5,000 obsolete tanks is at least $1 billion. The cost of new tools for a tank plant would be less than 10% of that amount.

*This Committee, headed by Mr. Harold Vance, President of the Studebaker Corporation, included Clay Bedford, then President of Chase Aircraft, Manly Fleischman, former Defense Production Administrator, and several retired military leaders with wide experience in procurement.

Savings Will Multiply

On the basis of facts like these, the Vance Committee recommended that the Defense Department spend $500 million to $800 million per year on specialized defense production facilities in order to provide substantial reserve capacity as soon as possible. It also recommended that expenditures for military end-products which get obsolete rapidly be held to a minimum. The Eisenhower administration has adopted this approach to the problem of munitions production in asking that $500 million be invested in reserve capacity.

The importance of this approach is much greater than is indicated by the amount of money to be spent on new tools, although this amount will go far toward assuring a healthy machine tool industry, adequate to meet emergency demands. ***What is really important is the great saving that can eventually be made in the cost of our defense program by a modern tooling program.*** If we are to maintain this program for a long period, and if we are to pay as we go, we must have a low-cost program. No other plan to reduce and control the cost of a garrison economy can compare with the new approach suggested in the Vance Report and now embodied in the new defense budget.

Congressmen will do well to scrutinize all military appropriations carefully. They have a chronic tendency to be too big. But there should be no penny-pinching on investments in capital equipment that will pay out in as short a time as six weeks in a war emergency. It would be tragic if this opportunity for real economy were lost in the controversy over other aspects of the defense program. ***The tooling program is a key part of the Eisenhower effort to cut defense costs. It should be promptly approved.***

McGraw-Hill Publishing Company, Inc.

SAFETY GLASS INTERLAYER: One promising potential for polyvinyl butyral.

No End to End-Use

It's beyond question that the chemical industry is a "growth" industry. One basic reason is the fact that a single chemical product is the progenitor of a host of other items. So it is with vinyl acetate monomer. It's the basis for countless plastic products, paints, paper, textiles, adhesives, pharmaceuticals.

But unlike most chemical stand-bys, vinyl acetate completely warrants the hackneyed phrase "old, yet ever-new." And with each discovered outlet its growth potential takes another leap. At the moment, one of these burgeoning new developments for vinyl acetate appears to be in the water-based paint field. In the space of the decade since the introduction of butadiene-styrene emulsion paints this market has expanded. rapidly (*CW, Aug. 9, '52*). . . .

From scratch the fast-drying, easily applied type paint edged out oil-based coatings for interior work; by last year had cornered some 40% of the market, is now selling to the tune of 40 million gallons (see table).

Rubber-Based Paint Consumption

(In millions of gallons)

1948	0.1
1949	2.0
1950	3.5
1951	30.0
1952	35.0
1953 (est.)	40.0

If hopes of vinyl acetate polymer makers are fully realized, the newer "plastic" paints will hit a sales level to dwarf that gallonage, and in half the time. Right now these products are on the market in limited quantities, mostly on a test basis. Even optimistic boosters peg the current vinyl acetate usage in paints at "considerably" less-than-a-million lbs. But the expansion possibility is great. Some are not adverse to predicting that a whopping 80-100 million lbs./year of vinyl acetate will be sloshed on walls in five years or so. Before this is reached, however, a few more bugs will have to be eliminated. Some retardants now—or soon to be— licked:

- Can stability of the vinyl acetate product. (Some solvents tend to take the water from the emulsion which decreases its shelf life.)
- "Cratering," or pinholing, of the paint after application. One main cause: aeration by high-speed mixing equipment during manufacture.
- Tinting problems.
- Necessity for special plasticizers.

Market Conditioners: Farmers and amateur gardeners will not soon forget the slam-bang publicity barrage which introduced soil conditioners. Copolymer of vinyl acetate and maleic anhydride, soil additives probably now consume less than 2 million lbs./year of the former. With the need for stepping up farm product output from an ever-decreasing acreage—both due to the constantly increasing population—vinyl acetate consumption in the conditioners may well jump 2 to 3 fold within the next few years.

Another comparatively new usage for vinyl acetate is its incorporation into synthetic textile fibers. The polyvinyl acetate-acrylonitriles have posed some competition headaches to natural fibers. Though the synthetics in general—and the acrylics in particular—are at the moment nursing some sales-slowing headaches of their own (*CW, Aug. 8*), there's little doubt that textile outlets will again one day siphon a goodly portion of the available vinyl acetate.

It's no news—but not too generally known—that the Japanese are currently turning out a vinyl alcohol fiber on a commercial scale. Some American companies are probing the possibility of fitting it into the textile-fiber pattern here. None, however, has revealed any plans for producing it in this country.

Spreading Tree: If some of the new uses for vinyl acetate have a promising potential, it is equally true that the older established uses are also growing at a hopping rate.

The tree branch-like end-use pattern of the vinyl acetate monomer, of course, stems from the fact it can be converted into so many other chemicals which are important in their own right. Biggest: polyvinyl acetate, alcohol, formal, butyral; the copolymers with vinyl chloride.

Probably 45% of the monomer winds up as polyvinyl acetate. Polymerization is a relatively simple operation; the reason why many companies have been selling the resin for a long list of applications. Adhesiveness is the prime quality of PVAc, hence its demand as an important synthetic glue for wood, glass and paper.

Chief uses are in wood-bonding for furniture making; gluing plastic films to both wood and paper; binding papers and fibers into non-woven fabrics (e.g., disposable tissues).

Other growing uses for the resins includes sizing for textiles, paper coating, leather finishes; chewing gum.

Polyvinyl alcohol while not as big a monomer gulper as PVAc, does siphon off a healthy 22 million lbs./year. One estimate sees current and new alcohol outlets hiking that amount an additional 20 million lbs./year by 1958—a scant five years from now. Last year some 10 million lbs. went

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into textile finishing and sizing; about 12 million filtered into stabilizers, paper sizes, coatings and film.

The vinyl alcohol was found ideal for coating nylon while it was in the process of being manufactured into hosiery. A polyvinyl alcohol-boric acid solution cemented the loops in the finished fabric, thus stiffening it for convenience during operations. It met, too, one major qualification: the solution had to boil off in subsequent processing of the knitted hose in ar. aqueous bath.

More up to the minute and dramatic outlet for PVA may be tied in with the new three-dimensional craze sweeping the country. Polyvinyl alcohol is used in polarizing spectacles. 3-D viewing of photographs is not new; visual instruments using PVA were developed for aerial photography during the war and have been adapted for commercial selling. Two pictures are reproduced one over the other in a single light-polarizing print. When viewed through the treated glasses, the print appears to be a three-dimensional model.

See-through, But Safe: One of the most significant steps in the protection of the public is the development of a satisfactory and efficient safety glass for automoblies. Interlayer sheeting made from polyvinyl butyral fulfills most of the requirements for a good laminated safety glass. It is particularly resistant to deteriorating influences of prolonged exposure to heat, light and moisture; holds the broken pane together and stretches under a severe blow.

The resin is compounded with other ingredients to form a dough, which is extruded through a slit to form continuous sheeting.

Polyvinyl butyral is by no means limited to safety glass—the resins also find use in molding compounds, adhesives, coatings, laminations—but that outlet is the major one. Current consumption of vinyl acetate for glass use has been variously pegged between 15-20 million lbs./year. Chances are that figure, too, may soon be upped as more safety glass markets are tapped. One definite possibility practically untouched: windows for homes and offices.

Plastics, Plastics Everywhere: Most familiar to the consuming public—but not as such—are the polyvinyl acetate copolymers with vinyl chloride. Aprons, shower curtains, rigid piping, shoes, packaging, linings, films for protective garments, household items, hospital equipment—these are but a few.

Brighter prospects for the new

Vinyl Acetate Use 1953 (Est.)
(Millions of Lbs.)

PVAcetate	45.0
PVAlcohol	27.0
PVFormal and PVButyral	20.0
PVCopolymers	15.0
Total	107.0

derivatives and increasing demands of the older applications assure a niche for vinyl acetate among the most rapidly growing industrial chemicals. In the last few years U.S. production has practically doubled, is now well over the 100 million lbs./year hump. One admittedly optimistic estimate has output again doubling in the next three or four years.

Celanese Corp.'s recent entry into the field with an over 30 million lbs.-plant (Pampa, Tex.) does not crowd older producers Carbide and Carbon, DuPont and Canada's Shawinigan. The latter pours into the U.S. some 27 million lbs. of vinyl acetate monomer and polymer.

DuPont, however, consumes its entire production of monomer, and is also a steady outside customer.

Trade talk is that still another producer may step into vinyl acetate manufacture—and guessers are saying if that is so it may be next year.

But from the present look of things it's a question whether or not even that added possible production will be enough for future spiralling consumption.

Prelude to Plenty

Oronite Chemical Co. has slashed the price of developmental quantities of isophthalic acid (IPA) from $5 to $1/lb., and though there's no official confirmation, it's a good bet that IPA will soon be moving out of the pilot plant into market place competition with its analog, phthalic anhydride.

This latest development is in line with Oronite's view that isophthalic, even at the old $5 lb. price tag, was an industrial chemical, not a specialty item (*CW, Aug. 16, '52*). Now it is apparently showing that it means business and wants consumers to accelerate their pilot-plant evaluation with the prospect of being able to buy large quantities in the future.

Just when that date will be has not been revealed, if it is known. Best guess is that Oronite policy-makers have given first-stage approval to plans for a multimillion-dollar, multimillion-pound IPA plant. The trade has it that the final decision is

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Profit in Three: Isophthalic's eventual emergence as a large-scale chemical will provide a profitable outlet for all three of the mixed xylene isomers obtained in platforming and Hydroforming operations. Ortho and para have already attained commercial stature; the former is oxidized to phthalic anhydride, the latter to terephthalic acid (which, with ethylene glycol, is the raw material for DuPont's Dacron fiber).

These two have been separated from the mixture, but until now the meta, which can be oxidized to IPA, was left mixed with ethyl benzene used for gasoline enrichment. A big plant to make isophthalic will change the picture, make separation profitable.

Usewise, IPA is competitive with phthalic in surface coatings and plasticizers—applications that consume 85-90% of the phthalic produced. However, IPA is also expected to be utilized in some applications beyond the scope of its big brother.

Pricewise, of course, IPA at $1 can't compare with 22¢/lb. phthalic. But that figure will undoubtedly be trimmed considerably when the material is commercially available, and it may well be in the phthalic range.

Potash Moves Up

Farmers may at last be heeding the oft-repeated urgings (*CW, Apr. 4*) of the U.S. Dept. of Agriculture and various interested associations to "scatter more fertilizer, reap more benefits." At least potash producers could justify that conclusion after scanning some deliveries data put out by the American Potash Institute last week.

The report shows that potash deliveries to farmers in the continental U.S. during the fiscal year, June '52 through May '53, totaled more than 1.73 thousand tons K_2O—a substantial 13% jump over last year.

Potash consumption has been maintaining a satisfactory rate of climb over the past several years. Some recent statistics:

Potash Fertilizer Consumption, U.S., Hawaii, Puerto Rico (Tons K_2O)

1947-48	921,000
1948-49	1,073,000
1949-50	1,105,000
1950-51	1,380,000
1951-52	1,581,000

Though deliveries do not necessarily correspond to consumption, the figures are generally close enough to show an upward trend in 1952-53 consumption.

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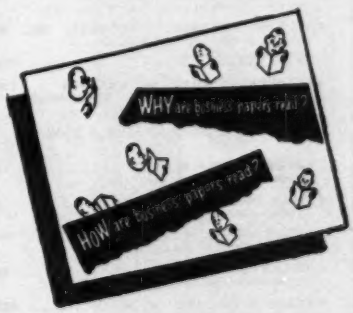

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MARKETS . . . . . .

The latest institute report also points up the healthy 12%-better-than-last year's potash deliveries in North America. This year's total hit a record 1,946,000 tons K_2O. But while American potash producers' shipments were well over any previous year, those of imported potash—about 177,000 tons—are somewhat lower than last year's.

Exports Down: Less potash was shipped to some foreign users. Out-of-country shipments for the recently ended season include 4,580 tons to Cuba, off by a whopping 74%, while Puerto Rico received 16,500 tons, about 30% less than last year.

Hawaii, however, joined Canada in the ranks of those taking more. Deliveries there jumped 36%, amounting to more than 19,000 tons. Canada took 73,000 tons, an increase of 20% over the previous year.

Deliveries to all other countries hit a scant 2,000 tons—a drastic 77% slash compared with last year.

Top Dog, 60%: The institute further says that the 60% muriate of potash continued to be the principal grade, comprising more than four-fifths of the total agricultural potash delivered. Others: sulphate of potash and sulphate of potash-magnesia together made up 6% of deliveries; 50% muriate about the same amount; while manure salts dropped to less than 1%, reflecting trend toward the use of more concentrated materials.

Potash headed for chemical uses increased 22% over last year. The amount was slightly under 100,000 tons K_2O, with 60%-muriate grade amounting to 95% of that total, and sulphate of potash making up the balance. The figures, (including shipments to Canada), in tons of 2,000 lbs. K_2O:

60% Muriate	93,696
Sulphate	5,084
Total	98,780

Farm Lime Steady: On the other hand, U.S. farmers have apparently plateaued their yearly liming material consumption to an approximate 26-million-ton level. In its latest—and incidently, 24th consecutive annual—survey, the National Lime Assn. points out that for the third straight year there was virtually no change in agricultural lime use. Total for 1952 hit an estimated 26.4 million tons.

The area breakdown in million tons:

Northeast	2.5
East Central	3.6
North Central	17.3
Southern	2.0
Western	1.0
Total	26.4

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